

OCTOBER 1915 VOL. NO. 118

Issued Every Month

For Free Distribution to Users
of Machine Tools

HITCHCOCK'S
**MACHINE
TOOL LIST**

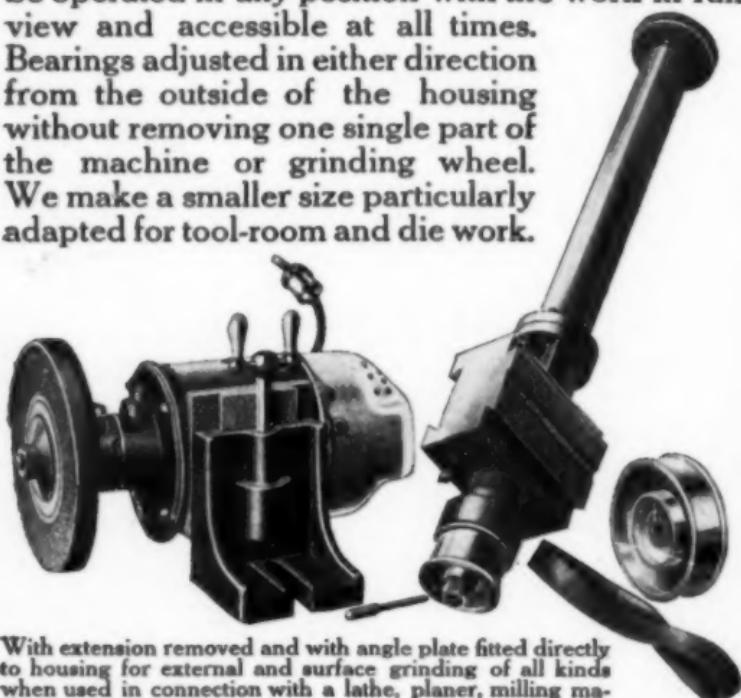
A Reference Book for Buyers
of Iron Working Machinery

Published by
A. H. HITCHCOCK
1220-1235 Caxton Building
Chicago

The New "HISEY" Precision Portable Electric Grinder

A Combination Internal and External Grinder

The unique construction allows the machine to be operated in any position with the work in full view and accessible at all times. Bearings adjusted in either direction from the outside of the housing without removing one single part of the machine or grinding wheel. We make a smaller size particularly adapted for tool-room and die work.



With extension removed and with angle plate fitted directly to housing for external and surface grinding of all kinds when used in connection with a lathe, planer, milling machine or boring mill.

All machines operated from any incandescent lamp socket

Most complete line of Hand and Breast Drills, Radial Drills, Sensitive Bench Drills, Aerial Grinders, Buffers, Bench and Pedestal Grinders, Beveling and Glass Blocking machines.

Complete catalog on request

The Hisey-Wolf Machine Co., Cincinnati, O.

New York Office, 50 Church Street

LOWER THREADING EXPENSE

**The National-Acme
Manufacturing Co.**

at Cleveland, Ohio, are using

NAMCO DIES

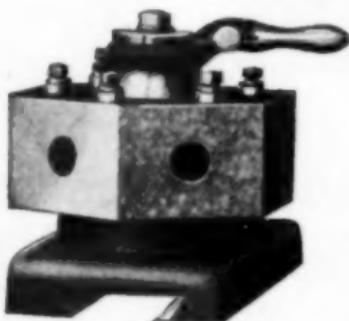
for the cutting of more than a
**HUNDRED MILLION
THREADS per YEAR**

The reasons why this Company
finds NAMCO DIES the most
profitable Threading Tools to use
are the self-same reasons that
appeal to men experienced at
Thread Cutting in your shop—
and are found on the two center
pages of this magazine.

LARGER THREADING PROFIT

Making SHRAPNEL?

Here is Standard Equipment



Style O



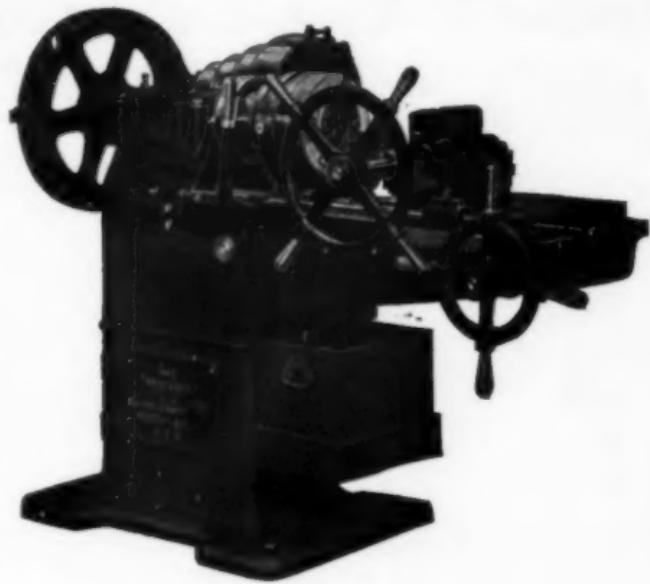
Style G

The Fay & Scott turret tool posts shown here are being universally adopted as standard equipment for the manufacture of shrapnel.

The square head turret, style G, is used for turning the outside of the shell. The hexagon type, style O, for boring and threading, or inside work. We have made these turrets for years, and can fit them to any make or size of lathe, old or new.

Catalog and full details on request

Fay & Scott, - Dexter, Me.



Reliance Bolt Cutters

Built in sizes $\frac{3}{4}$ inch to 6 inches, Single, Double and Triple, of the most up-to-date design. There is, also, a good reason why the "Reliance" is such a satisfactory machine for accuracy of threads cut, large production and low cost of maintenance, even in the hands of inexperienced labor. A lot of this reason is in the Opening Die Head, and we would like to tell you all about it. Interesting information for the asking.

The Foote-Burt Co., Makers
Cleveland, Ohio

Dalton 6" All-Around Lathe



Manufacturing: Many plants are shaving costs by using Daltons on small parts in quantities.

Precision Work: Built for the finest and most accurate work required of a small machine.

Power: With strength and power for work often done on 14" to 20" lathes.

Screw Cutting: 3 to 144 per inch.

Electric drive, foot power or power driven; various mounts, for floor or bench; several attachments.

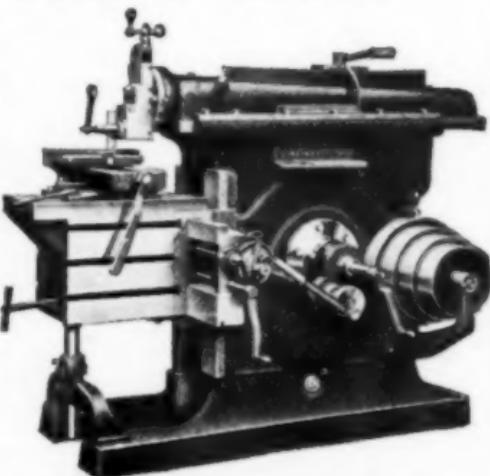
Write for Bulletin B-600

Dalton Machine Company, Inc.
1901-1915 Park Ave., New York, N. Y.

SHAPERS

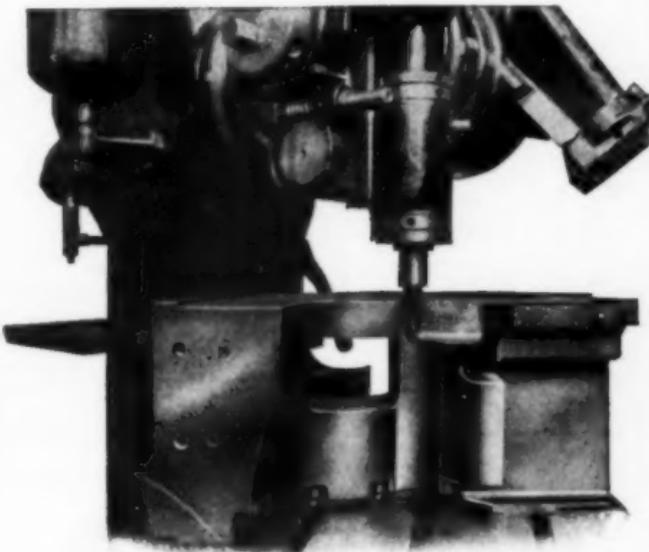
12", 14", 16"
Plain Crank,
16", 20", 25"
B. G. Crank,
either Cone
Driven or
through
Speed Box.

24", 28", 32"
Geared
Shapers of
the Belt Shift
type.



The Smith & Mills Co. Station B.,
Cincinnati, O., U.S.A.

Doing the Work of Three Machines
with the Cochrane-Bly
Universal Shaper



THIS shows the Universal Shaper completely machining a cast iron mould at one setting, saving 25 per cent in chucking time. Previous methods employed necessitated the use of a milling machine, shaper and a drill press. The work was done so close to finished dimensions, and surfaces so smooth, that very little filing was required. To complete the piece nine distinct operations were performed; *all at one chucking—think of it!*

Cochrane-Bly Company
Rochester, N. Y., U. S. A.



Enlist

Enlist in the army of happy shop owners who have found by installing **Grant Noiseless Riveting Machines** that their output is increased—that their product has a higher quality finish.

An army of **Grant Noiseless Riveters** may be operating at the same time without noise or vibration.

All rivets are highly polished and perfect. Machines will rivet both tight and loose.

*Send samples and let us show you what a
GRANT Riveter can do for you.*

Grant Mfg. & Machine Company
C. E. Station, Bridgeport, Conn.

A. B. C. Steel Bearing Balls

Are Accurate to 1-10,000 of an Inch



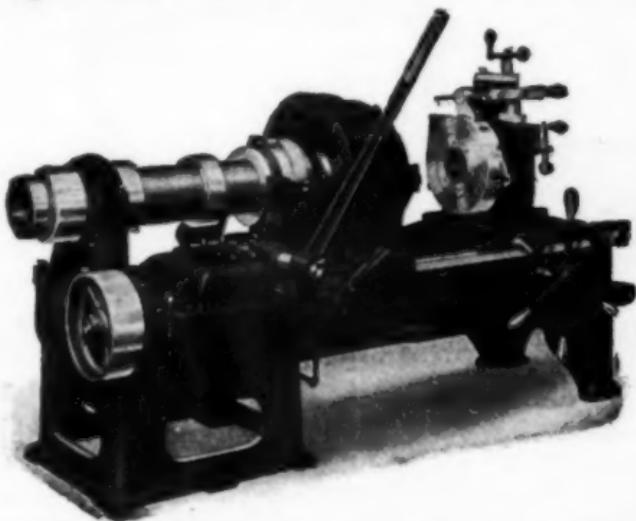
In Sizes $\frac{1}{8}$ to $\frac{1}{2}$ -Inch

Made for the finest bearings, or in any other grade desired—all absolutely accurate and highly finished. A trial order will demonstrate their splendid qualities.

The Abbott Ball Company
Elmwood District, Hartford, Conn.



B. & K. Machines Assure You
Pipe Threading At Lowest Cost



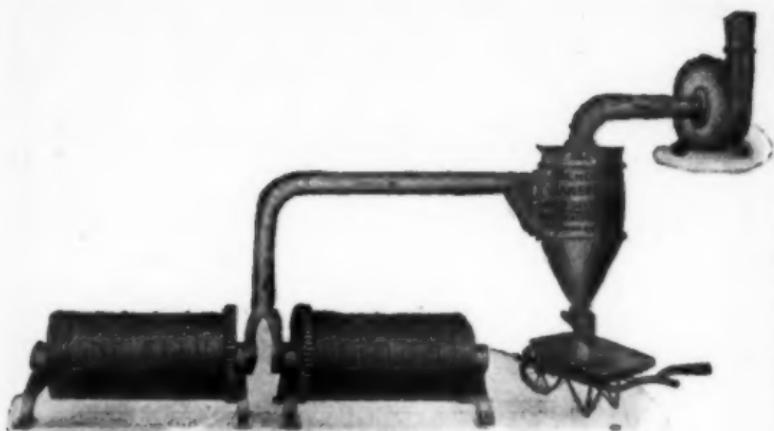
FOR 31 YEARS we have kept busy at the interesting game of building and improving our machines so they would give better service—thereby enabling you to whittle down costs.

From a humble beginning we have increased our line up to the present comprehensive 17 styles and sizes, for pipe from $\frac{1}{4}$ to 18 inches. This enables you to get exactly the right machine for your work.

All B. & K.s. have the famous Peerless Quick Adjusting Mechanism, whereby quick and reliable adjustments may be made to the thousandth of an inch. The nipple holders will not injure threads; chuck jaws are readily sharpened without drawing temper. Every detail has had careful attention.

There are other good features—let us tell you about them

Bignall & Keeler Machine Works
Edwardsville, Ill.



On Economy In Dust Collectors

Knickerbocker Says:



"The coarse sand from tumblers and sand blasts and the emery from grinders, wear out the spider, the blades and the casting itself—of the fan.

And you force this sand that cuts out iron and steel into a bunch of cloth screens to stop the sand and let the air pass on. The theory is fine—but how about the practice? Well—listen—a correspondent writes:

"We might advise we have a 300 unit dust collector made by..... This Collector has been giving us more or less trouble due to the fact that the curtains wear out about every eight months and must be replaced at an expense of at least \$175.00. This arrester collects the dust from 12 tumbling mills."

The remedy?

Put a Rarefied ahead of this fan to collect the sand and emery and stop the cutting out of fan and screens."

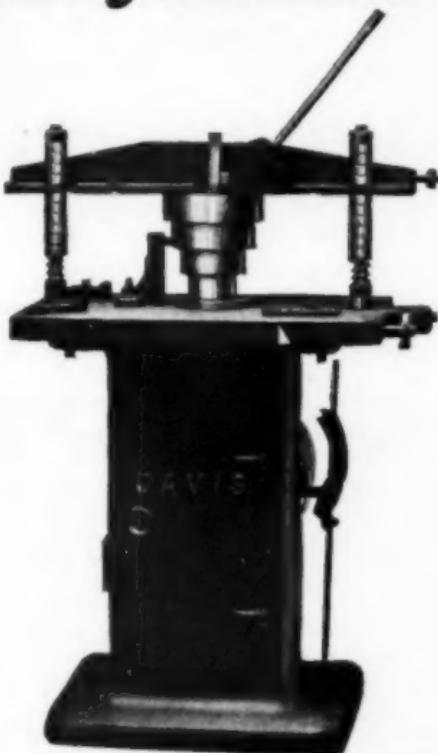
Booklet and list of prominent users on request

The Knickerbocker Company
Jackson, Michigan

**Pulleys
Handles
Gears, Etc.**

All small work done economically
on one of our

Keyseaters



No. 1 Keyseater, with cone pulley in position to have Keyway cut.

Write for particulars of our Nos. 1 and 2 Machines.
Treatise on Keyseating sent free on request.

The W. P. Davis Machine Co.
307 St. Paul St., Rochester, N. Y.

Steel Handles

Ball Crank, Compound Rest,
Ball Lever Handles, etc.

The **price** is below manufacturing cost of cast or forged handles, and in **quality** there is no comparison, being accurate, highly finished and ready to attach.

Get our catalog of standard handles, with prices and discounts, and note the many advantages.



The Cincinnati Ball Crank Co.

Oakley, Cincinnati, Ohio

Seven

Characteristics of American Vulcanized Fibre

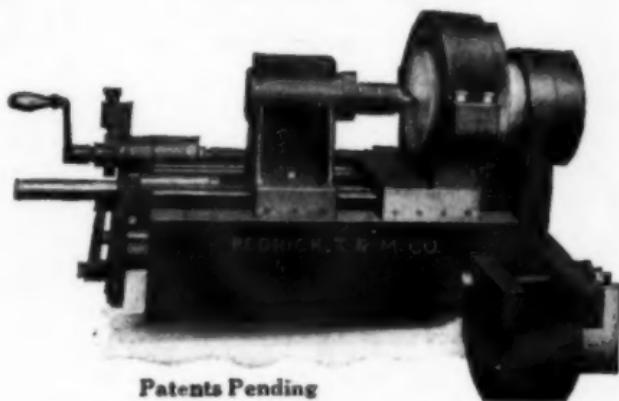
1. Dielectric—Electrical rupture, 150 to 400 v. per .001" thickness.
2. Tough—Consistency of horn, and, is made hard or flexible.
3. Resilient—Much like wood—A great shock absorber.
4. Machineable—You can turn, cut, drill, bore, tap, thread, bend or emboss.
5. Oil and Grease Proof—Insoluble in oil or its derivatives.
6. Fire resisting—Will burn, but only at very high temperatures.
7. Stocked for immediate shipment in sheets, rods, bars and tubes. We will machine to *any* machineable shape in *any* quantity. Ask for further information.

American Vulcanized Fibre Co.

560-570 Equitable Building, Washington, Delaware

American Vulcanized Fibre

COMING INTO ITS OWN
**Pedrick Portable Crank
Pin Turner**



Patents Pending

Wide awake repair shops, industrial plants and railroads are using our machines for reducing the cost of making repairs in position. They save money not only in lessening the time required, the expense incurred, but in the better work and greater accuracy that our machines produce.

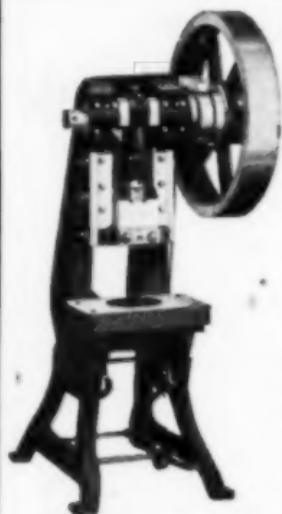
Our Portable Crank Pin Turning Machine has a much wider range of work than any similar tool on the market. This can be clearly shown by examining the numerous illustrations in our catalog which we will gladly send on request.

The name Pedrick has been connected with the design and manufacture of Portable Machine Tools for the past 45 years.

**When you think of Portable Machine Tools,
think of Pedrick.**

*Portable Cylinder Boring Bars, Portable
Millers, Pipe Benders, etc.*

Pedrick Tool & Machine Co.
3644 N. Lawrence St., Philadelphia, Pa.



Some Buyers

Still give consideration to
weight rather than design

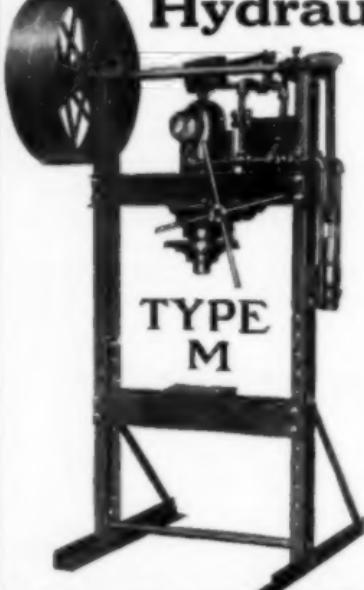
HIGH DUTY
ROCKFORD
PUNCH PRESSES

are an excellent example of
why punch presses should not
be bought by weight, but
rather for results obtained by
proper design, improved fea-
tures and correct proportions.

*Let us send you catalog telling
all about them.*

ROCKFORD IRON WORKS
ROCKFORD, ILL.

Hydraulic Presses



Down..... Push
Up..... Push
Horizontal..... Push
Any kind of.... Push
Any length of.. Push
Any speed of... Push
Any pressure of Push

LOURIE MFG. CO.
Springfield, Ill.

For Cleaning

New or Old Small Metal Parts
Quickly—Cheaply—Effectively

For removing oil, grease and chips from newly made metal parts, for case hardening, plating or assembling, and for cleansing old parts while overhauling machines or motor cars, the



Gray & Prior Soda and Potash Kettles

offer the simplest and
cheapest effective method.

A solution of sal soda at about a cent a gallon, a Bunsen gas burner to bring it to a boil, the immersion of the parts for a moment in the boiling liquid, and out they come entirely free from dirt, and so hot that they dry in a minute or two, without danger of rusting.

Cost less than steam kettles, with their pipes, valves and fittings; cheaper and safer than gasoline; and as they require no permanent pipe fittings, they may be moved about as desired.

Made in 10 and 30 Gallon Sizes

Can make prompt shipment. Write for folder.

Gray & Prior Machine Co.
Hartford, Conn.

Allen Safety Set Screws



Send for circular No. 13 and sample screws (for testing).
ALLEN MFG. CO., - Hartford, Conn.



The Production Boss

“Don’t Care A Cuss”

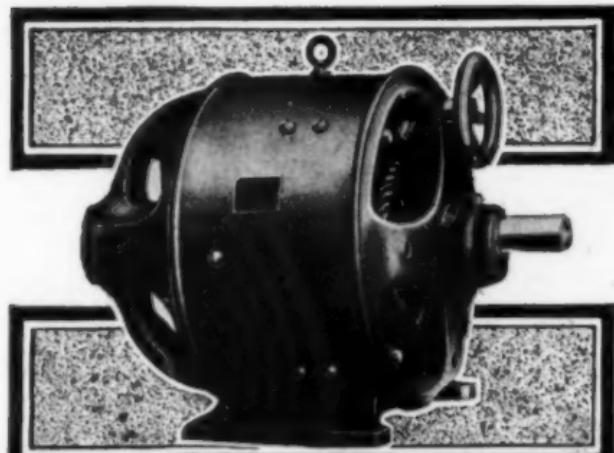
What make or kind of tool he uses—he wants **SERVICE**; he must have **continuous PRODUCTION**.

SHRAPNEL Tools

The Kelly Adjustable Kind

THE KELLY REAMER CO.
CLEVELAND, OHIO, U. S. A.

C. W. Burton Griffiths & Co., London, English Agts. 40 Domestic Agencies.



Get any speed easily—quickly

That's what you must do to get the most out of those machines on which the working conditions are frequently changing. The simplest way to get just the speed that suits the job is by applying

Reliance Adjustable Speed Motors

These motors run at any speed with a constant horsepower output over any range up to 1 to 10. To change the speed just turn the hand wheel--no electric controller is needed.

Get the details in folder 10L

(We build constant speed motors)

Reliance Electric & Engineering Co.
1050 Ivanhoe Road, Cleveland, O.



**Burke's No. 3
Bench Millers**

Are Seasoned Tools

Our system of tests insures accuracy, and our methods of construction make it permanent. Frames and parts are carried 6 to 8 months, after work begins on them, before the completed tools receive our final O. K., and all parts are finished and fitted with exceptional care.

Longitudinal feed, 6 in.; traverse feed, $3\frac{1}{2}$ in.; vertical motion of knee, $8\frac{1}{2}$ in.; table surface, $3\frac{1}{2} \times 12$ inch.

Write for Catalog, which also shows larger and smaller sizes.

The Burke Machine Tool Co.
Conneaut, Ohio

Designed For Manufacturing



But built good enough for the Tool Room. If you have any doubt about it, just try one. Our two-speed Friction Counter and plain Index Center help you to do the trick.

Send for circular

The Carter & Hakes Co.
West Winsted, Conn., U. S. A.

Agents for New England, also part of New Jersey and New York:—
Hill, Clarke & Co., Boston and New York.

For Chicago and adjoining territory:—

Marshall & Huschart Machinery Company, Chicago.



“Whitney” Hand & Weight (feed) Milling Machine

Wide range with simple construction.

Greater Power than can be obtained on any other Hand Milling Machine of an equal size.

Vertical and Horizontal Feeds are independent. This feature permits work to be held close to the table and makes the Machine a Profiler.

The Spindle Head has Vertical Lever Feed and is accurately counterbalanced.

As the Vertical Lever Feed is independent from the Table and the Head accurately counterbalanced, light Milling may be done on long or heavy pieces without danger of breaking cutters.

The Spindle is driven by Interchangeable Side Driving pulleys, which, in connection with three Grade Cone on Back Shaft, gives Six Spindle Speeds.

The Table has Hand Lever Feed, also Crank Feed operated by Rack and Pinion.

The Pinion shaft is mounted in an eccentric bushing to allow for adjustment of pinion with rack.

Weight attachment is furnished for feeding both Head and Table automatically.

Catalog No. 10 Gives Full Particulars.

The Whitney Mfg. Co., - Hartford, Conn.

Chains — Keys — Hand Milling Machines.

Odd how some people learn only by experience.

For some reason not a one of us could ever induce a certain chap to even try a *Nicholson* Mandrel. Not he couldn't see why he should.

He ran into a large job some weeks ago—and at the same time happened to run out of the solid mandrel sizes he needed.

We gladly loaned him some mandrels for about a month—and then he kept them.

May we loan you some for 30 days? You'll probably keep them, too.

W. H. Nicholson & Co.
117 Oregon St., Wilkes-Barre, Pa.



Nicholson Expanding Mandrel

For Quick Accurate Boring Use

Armstrong Boring Tools

1=12 One Armstrong Boring Tool will take the place of a dozen forged boring tools



The bar may be extended from the shank or holder to any desired depth. Cutters are simply pieces of steel of stock size and shape that can be ground in a few minutes. Saves all forging and nearly all of the tool steel. Strain of cut grips cutter tighter.

Catalog for the asking

Armstrong Bros. Tool Co.

"The Tool Holder People"

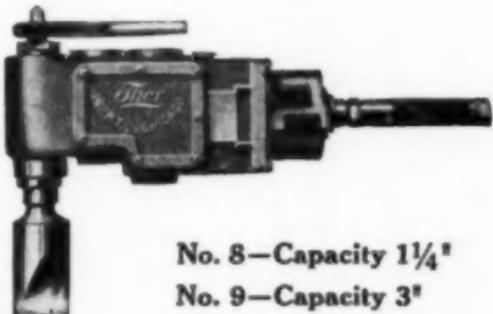
308 N. Francisco Ave., Chicago, U. S. A.

Our complete line is on exhibition in Block 41, Palace of Machinery, Panama-Pacific Exposition, San Francisco.



Thor *Close Corner* Drills

Most convenient tools made for
use in close quarters. Ratchet
feed.



No. 8—Capacity 1 1/4"

No. 9—Capacity 3"

**Shipped-On-Trial
FREE**

Ask for Bulletin W, Showing Complete Line

**Independent Pneumatic
Tool Company**

Chicago New York Pittsburgh Detroit
San Francisco Atlanta Montreal

Combination Disc Grinder & Roll Sander

"Best machine ever built for pattern shop use"

The No. 20 Gardner combines both the disc wheel and the sanding roll into a compact, sturdy and accurate machine. The disc wheel is used for producing flat surfaces and external curves; the sanding roll perfects internal curves which have been roughed out on a band saw.

Both this disc wheel and the roll remove stock with extreme rapidity and accuracy. With this machine at hand your apprentice boy can do, with greater speed and quality, much of the work formerly done by your best man. A Gardner No. 20 soon pays for itself in any modern pattern shop working four or more men.



Get the details today

Gardner Machine Co.

The Disc Grinding Authorities

Beloit, Wisconsin

Largest Disc Grinder Builders in the World



The

Greenfield

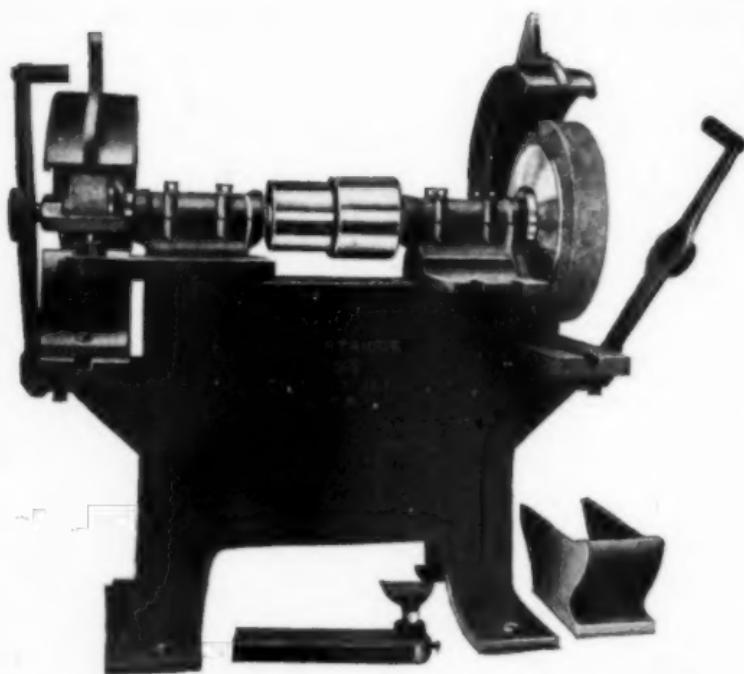
For Special Work, Tools, Jigs, etc.

This Universal Grinder is just the machine needed in many of the shops engaged in equipping for the manufacture of special lines. It is an all-around grinder and will handle about any kind of a job that comes within its range.

It will turn out accurate, dependable work. Also, we believe we are perfectly correct in stating that we furnish this machine with a larger and more complete set of attachments than can be had for any grinder selling at anything like the same price.

We also build Plain Grinding Machines for production work

Greenfield Machine Company
Greenfield, Mass., U. S. A.



Partridge Heavy Grinder Is Safe—Efficient—Durable

—and therefore an economical investment. Neither effort or expense have been spared to make the No. 555 satisfactory in every way. You could pay more for a machine, but you could not procure more grinding service for your money.

The heavy steel guards (patented), are adjustable to the wear of the wheels, and are fastened rigidly to the machine. It is equipped with attachments to connect with blower system. No. 555 carries 18x3 emery wheels, is built for heavy work, and weighs 1,160 lbs., net.

I make all sizes of emery grinders to carry from 6 to 20-inch wheels; also bench tapping machines and foot presses. Let me quote you, or ask your dealer.

E. O. PARTRIDGE, 2047-49 W. Lake St., CHICAGO

This is An Inexpensive
Cutter, Reamer and Drill Grinder

It has Generous Range and Capacity
The Price is Within Your Reach

Don't delay—look it up now!

Particulars, prices, etc., sent on request.



Style BX

We also make

Drill Grinders—Surface Grinders—
Lathe Center Grinders—Universal
Grinders—Tool Grinders—etc.

Wilmarth & Morman Co.

1185 Monroe Ave., Grand Rapids, Mich.

Pattern Shop Machinery

Special Prices if you refer to this ad.



Band Saws

Chicago No. 00 27 in. Wheels
" No. 0 32 " "
" No. 1 36 " "



Saw Tables

Chicago No. 5 Stationary Table
" No. 9 Tilting Table
" No. 10 "

Boring attachment if wanted.



Jointers

8 in., 5 and 6 ft. tables and guard.
12, 16, 20, 24 and 30 in., 7 ft. tables
and guard.

Trimmers, Lathes, Core Box Tools, etc.

Ask for full descriptions

Chicago Machinery Exchange

1214-1228 Washington Boulevard, Chicago



Floor Operated

Electric Traveling Cranes

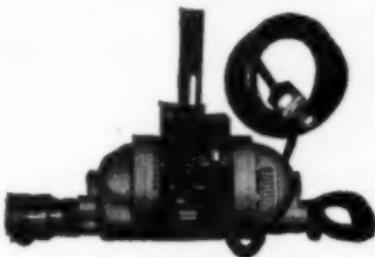
do not require an operator in constant attendance and are frequently as well or better adapted for handling material than the more expensive cab operated.

We make all types of overhead cranes and hoists.

The Euclid Crane & Hoist Company
Euclid, Ohio

Universal Motor Drills

For Use On Either Current



This drill is made in 3-16", $\frac{1}{4}$ ", $\frac{5}{16}$ " & $\frac{3}{8}$ " size. Gears run in grease. Motor air cooled, and is made to stand hard service. Sent on trial.



0 to $\frac{7}{8}$ Universal Drill

The motors used in these drills are Westinghouse motors, and operate on 25, 30, 40 or 60 cycle. 110 or 220 volts.

The U. S. Electrical Tool Co.
Cincinnati, Ohio

NEW YORK, 38 Church St. CHICAGO, 549 W. Washington Blvd.
BOSTON, - 12 Pearl St. ST. LOUIS, - 610 Commercial Bldg.

Stock carried at branch offices.

Do You Want to Save Money?



Combination Drill and Micrometer Boring Head No. 8

Eliminates time, material and expensive mistakes boring your jigs and fixtures—quick and accurate boring—inside recessing on screw machines.

Graduated on face for different size drills.

Size of Body | Off set | Limit of Drills | B&S Shank | Boring Bar
3 $\frac{1}{4}$ " dia. x 2 $\frac{1}{4}$ " lg. | $\frac{1}{2}$ " | From $\frac{1}{8}$ " to $\frac{3}{4}$ " dia. | No. 10 | $\frac{3}{8}$ " dia. x 5 $\frac{1}{2}$ " lg.

Net prices: Boring Head with wrench \$12.00; Taper Shanks \$2.00; Boring Bars \$1.00. Any size Taper Shanks with Tang 40¢ extra. Blank Shank with thread \$1.35.

J. T. Flynn Mfg. Company, *Detroit, Michigan*

Install "The Handiest Racks" Before You Take Inventory



For Pipe, Shafting and Bars

While invoicing or counting your bar stock, why not put it in tidy shape? You will wonder why you didn't do it before. Get ready for it now, by installing—

"The Handiest Racks"

They keep the stock in a fourth the space, where you can see what you have, where you can keep the different sizes separate, where you can get at it easily and quickly.

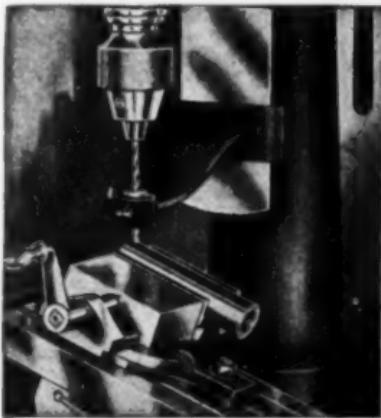
They save space, time, fingers and toes, and are inexpensive.

Let us describe them to you and quote our modest price

Wm. S. Yohe Supply Co.
314 Lincoln Way, West. Canton, Ohio

**Puts the hole
exactly where
you want it →**

and the tilting table with graduations in degrees gives you the correct angle.



The Drill Guide is recognized by every tool maker and machinist who values accuracy as just what he has needed dozens of times. The

Knight Milling and Drilling Machines

make possible a hundred-and-one valuable time saving stunts on hard machining of all sorts. Whether you are a big manufacturer or have only a small job shop, our machines can help you reduce costs. Made in three sizes. Our Duplex Miller is also a big economizer.

**W. B. Knight Machinery Company
St. Louis, Mo.**

*Saving 20 to
50% of time
is common
with a Knight.*

*Send for our
Booklet.*





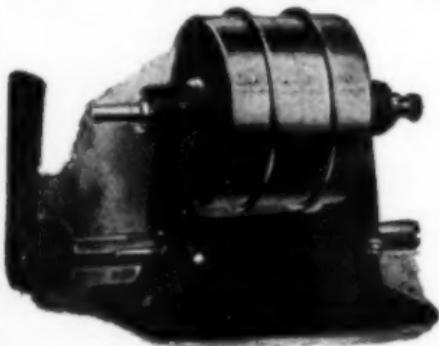
**Burke Quality
Excels on
Fine Points**

Machines of
Burke Quality
are never built
with any name
cast on the
frame but our
own—

**BURKE
CONNEAUT
U. S. A.**

For Sale Everywhere

**This Tapping Machine
Now Has Greater Capacity**



**Burke's
No. "D" Taps
5/8" Holes
in
Horseshoe
Steel**

BUILT throughout with exceptional care, our several sizes give service in proportion. Accurate, rapid and convenient, they give solid satisfaction. No. "D" sells for \$35.

Send for details today.

**The Burke Machine Tool Co., Conneaut,
Ohio**



FOR
**Big Quantity
High Quality
And Wide Range
OF WORK**

This Wall or Post Radial Drill Is At the Head of the Procession

A big price no longer stands in the way of your acquiring that much-needed radial. We have trimmed this machine of all superfluities, but have embodied the accuracy, power and convenience of the high-priced ones, besides some exclusive features. Has quick return lever, automatic cut-off, four-step counter with self-oiling bearings, etc. etc.

Price, F. O. B. Factory { With 2½-ft. arm, \$125.
With 3½-ft. arm, \$135.

For sale by all jobbers and machinery dealers throughout the United States. Send us your inquiry, and we will give you the name of our dealer for your territory.

We are proud of this production. Let us prove we have reasons.

Canedy-Otto Manufacturing Co.
Chicago Heights, Ill.

The Gang Radial responds to the hand of the operator as the eye responds to the will of the brain—under perfect control, instantaneous in action.



Our Radial Book Gives Details and Reasons. Ask for it.

THE WM. E. GANG CO.
Cincinnati, O.

High Grade Spindle Drills

At the Following Net Prices

2-Spindle, No. 320, \$116.
3 " " No. 330, \$158.
4 " " No. 340, \$196.

Simple--Substantial--Accurate

Overhang, 7-in. Capacity,
5/8-in. Maximum distance
spindle to table, 30-in.

Write quick for early delivery

Reed Drill Company
43 Hammond St., Worcester, Mass.





An Increase From 500 To 1,500 With This T. & F. Drilling Machine

Many manufacturers have doubled and even trebled their output by installing our 3-foot radial—a machine that has all of the desirable features of our standard line, to which is added a greatly increased capacity. It drills holes up to $\frac{3}{4}$ -inch in big, hard-to-handle pieces.

If you were drilling 500 pieces a day with a battery of machines, and a like number of T. & F.s. increased this to 1,000 or 1,500, wouldn't you congratulate yourself on the big saving in cost? We will gladly go over your needs and tell you frankly what our machines can do for you.

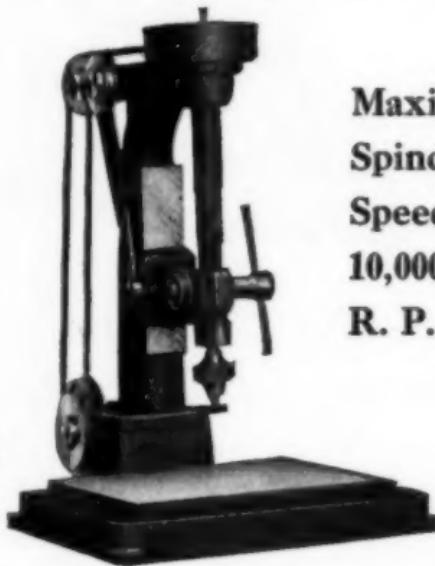
The Taylor & Fenn Company
Hartford, Conn.

Save Money

with this

High Speed Drill

Patents
Pending



Maximum
Spindle
Speed
10,000
R. P. M.

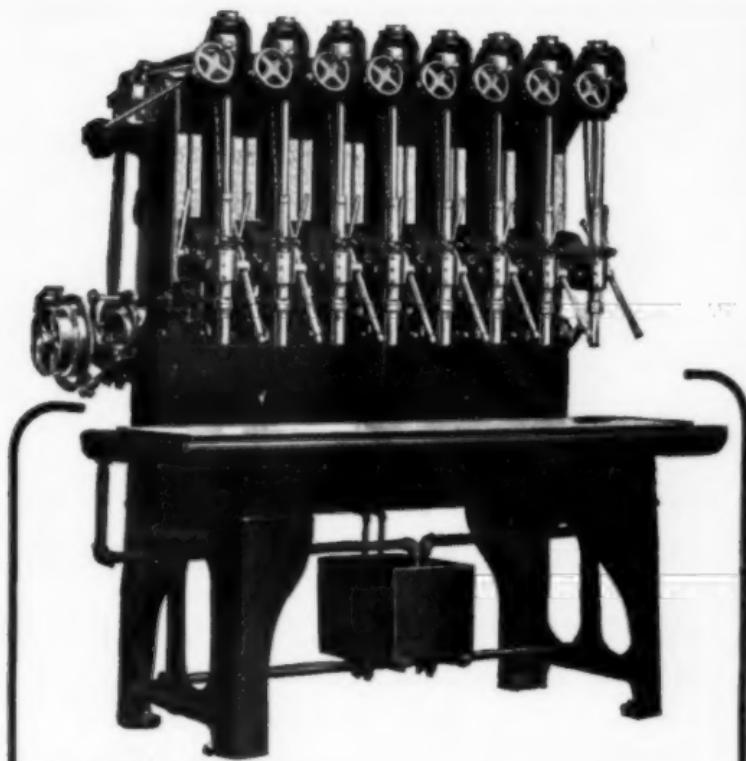
Double Your Production on Holes
up to $\frac{3}{8}$ " in diameter

This machine is carefully and accurately built
to give the greatest service. Equipped with
Hess Bright Ball Bearings throughout.

Ask for Bulletin No. 502

Leland-Gifford Co.
Worcester, Mass., U. S. A.





We Claim For Henry & Wright Drilling Machines

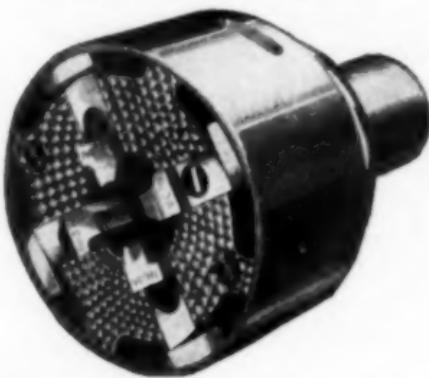
That our patented gearless power transmission, with other Henry & Wright improvements, make them the most productive and economical drilling machines in the world for $\frac{3}{4}$ -in. holes and under.

Everyone makes claims; we know that. But our claims have been absolutely proven in hundreds of the larger drilling plants, including the very largest in the country, where they must *know*—not guess—what gives them bed-rock costs.

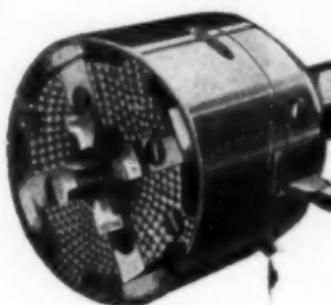
*But never mind about our claims so much as what is BEHIND them.
Write for particulars—also for our free Feed and Speed Chart.*

The Henry & Wright Mfg. Co.
760 Windsor St., Hartford, Conn.

NAMCO Revolving Die Head



NAMCO Non-Revolving Die



What You Have the Right to Expect From a Good Thread Cutting Die

ACCURACY—threads cut true to lead, uniform in pitch and smooth in finish.

PRODUCTION—not only when a Die is new, but continuously, and with a small amount of attention for adjustment and repair.

LOW DIE COST—threaded work that shows a profit on the merits of the Die—not a burden to be loaded on to a more profitable end of your shop equipment.

Catalogs or Descriptive Matter on NAMCO Revolving and Spring Dies sent on request. Just

The National-Acme Manu
Cleveland, O

Offices:

New York

Boston

Revolving Die Head



NAMCO Adjustable Chaser Die



Three Features of NAMCO Die Construction that Give Long Term Die Insurance

1. **Wide bearing of Cam-arms** upon the Chasers directly over the cutting edges where rigid support is most needed.

2. **Absence of usual Cap** over face giving ready access to Chasers for grinding and permitting a free flow of oil to make the Head practically self-cleaning.

3. **Fewer parts** than found in other Dies, right materials, sturdy construction. Heavy chasers correctly hobbed and hardened. These are the NAMCO features that mean longer life, lower costs and more profit from your Threading equipment.

Order Revolving, Non-Revolving, Adjustable Chaser Dies. Just ask for H. L. Die Catalogs.

Manufacturing Company
Cleveland, Ohio

Boston

Chicago

Detroit

**Don't Depend On Somebody Else
For Your Small Threaded Parts
Thread Them Yourself**

A Geometric Threading Machine Soon Pays For Itself

Takes floor space 2 ft. x 3 ft., and is complete with countershaft, change speed gear, adjustable stop for gauging length of thread.

No rough threads with the Geometric. They are as true and clean as can be produced on any screw machine.



Send in your specifications and learn what we can do for you.

The Geometric Tool Company
New Haven, Conn.
Chicago Office, 545 W. Washington Blvd.

**When Repeat Orders Come
in for Cutter Gangs Like
This It Proves They Are a
Profitable Investment.**



Last Fall we made up this big gang of seventeen interlocking high speed steel cutters for a prominent firm of machine tool builders. It measured 18" long, the largest cutter was 10" diameter and the smallest 5½"—a hard job on account of the size, shape, and number of cutters. We have lately filled a second order from them for a similar gang. They find it profitable to finish heavy parts by gang milling, and that B. & S. Cutters can be relied on for good service. We should be glad to quote on your requirements. On regular cutters we stock a line of 45 styles and about 5,000 sizes, all shown in our free Catalog No. 26.

May we send you a copy?

*A full line of Cutters at our Chicago Store,
626 Washington Blvd.*

**Brown & Sharpe Mfg. Co.
Providence, R. I.**

Easy to Operate---Easy to Buy Dickow's Popular

10-Inch Universal
Index Centers



We are originators of design. You save from \$40. to \$90. on first cost, and many times that by their simple construction and consequent ease of operation. Let's prove it to you.

Price Only \$95 Net,

F. O. B.
Cars
Chicago

Get the Original—Accuracy Guaranteed
Sold by all dealers. Write today for particulars.

Fred. C. Dickow, 35 So. Desplaines St., Chicago, Ill.

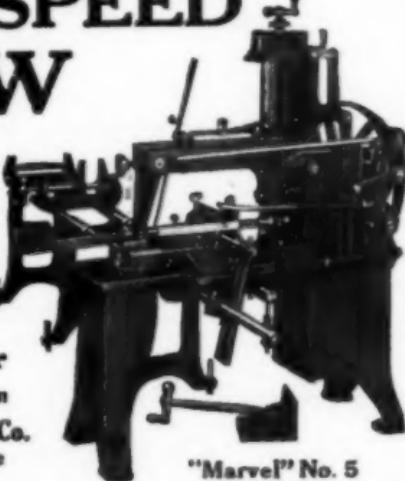
AUTOMATIC HIGH SPEED SAW

Attention is invited to
the "Marvel" No. 5
Cuts duplicate pieces
faster and at less cost
than any other
method. Entirely
automatic.

Feeds the Bar

Write for full information

Armstrong-Blum Mfg. Co.
341 N. Francisco Avenue
Chicago, Ill.



"Marvel" No. 5



No. 1—Eats Steel

Why Is It

That so many large shops are now equipped and being equipped with

The Newly Improved Racine High Speed, Metal-Cutting Machine?

FOR MANY GOOD REASONS—among others—because for speed, accuracy, economy and ease of operation THE RACINE cannot be surpassed. You MAY NEED ONE NOW. We will send a RACINE on any trial basis that is fair. WRITE US or any good dealer.

Racine Tool & Machine Co.

1500 Junction Ave. S., Racine, Wis., U. S. A.

A Straight, Smooth Cut

Through high speed or any hardened steel, brass tubing, aluminum or other soft metal, or wood and metal combined, is more quickly and cheaply made with the

Peter Bros. Abrasive Cutter

than in any other way. Saves the waste of material from notching and breaking, and the greater waste of time. Simple, inexpensive, a time and money saver every minute you use it. Soon pays its own cost.

8" Size, \$16.50, with C. S.

Splendid for tool room. Cuts high-speed steel up to $\frac{3}{4}$ " square.

12" Size \$42, with C. S.

Cuts up to $2\frac{1}{4}$ " diameter, round or square, at any angle up to 45 degrees. Ball bearing.

15 Days' Free Trial

Write us or ask your dealer

PETER BROTHERS MFG. CO.

115 Railroad St., Algonquin, Ill.



The "Quickwork" Edge Turner

For turning edges on fenders, shields, aprons, tanks, or any other parts made of sheet metal up to No. 16 gauge.

No matter what your work of this kind may be, we can furnish the rolls that will adapt the machine to your particular requirements—also with beading, crimping and flanging rolls, and rotary cutters for shearing metal. This machine is a wonderful cost-reducer, while increasing production and improving the quality of the product.

Every up-to-date sheet-metal-working plant should be posted on our modern Edge-Turning Machine, as well as on our "Quickwork" Rotary Shears, Power Beaders, Beading and Bending Machines, Power Hammers, etc., etc.

Put your sheet-metal-working problems up to us. We are experts. And write now for "Quickwork" catalog.



H. Collier Smith, 815 Scotten Ave., Detroit, Mich.



There's Economy

In Terrell's Steel Bins and Shelving

In addition to the considerable saving in space and fire risk, there is possibly an even greater economy in the fact that it is *a permanent asset*, not a periodical expense. It never wears out; and being built in standardized interchangeable units, it is easily rearranged to meet changing requirements without loss or damage.

First, you install only what you need now; that lasts practically forever—a permanent asset of indestructible and adjustable furniture, which costs nothing for upkeep; then you may add to it as desired, as you would to a sectional book-case.

May we not explain more fully, with illustrations and references? You will not be obligated to buy. If you do install Terrell's Steel Fixtures, it will be because you decide that we can help you solve your storage problem to your own best advantage.

Terrell's Equipment Company

Hall & Division Sts., Grand Rapids, Mich.

Increased Sales



During September 1915, without solicitation, more Jacobs Improved Drill Chucks were purchased than during any other month of our phenomenally successful career.

Why?

The following quotation from a large manufacturer's order, written September 28, 1915, answers that question: "During the past few years we have installed several of your Chucks, and are pleased to say that they are giving us universal satisfaction."

Our illustrated catalogue "H" sent upon request.

The Jacobs Manufacturing Co.
Hartford, Conn., U. S. A.

Sweetland Chuck Service



Which we offer you provides for all chuck needs and is the height of efficiency.

The Hoggson & Pettis Mfg. Co.
New Haven, Conn.

Union

Geared Scroll Universal Chuck

For Shell Work



Iron Body No. 143

In Shell Work this Chuck is particularly adapted inasmuch as the center hole can be bored out to a suitable diameter to admit the Shell it is to hold. The Jaws in this Chuck are also designed for internal gripping.

This type of Chuck is also regularly furnished with Extra Heavy Iron Body or with Steel Body in three or four jaw style.

Have You Our Catalogue?

Union Manufacturing Co.

New York Office,
26 Cortlandt St.

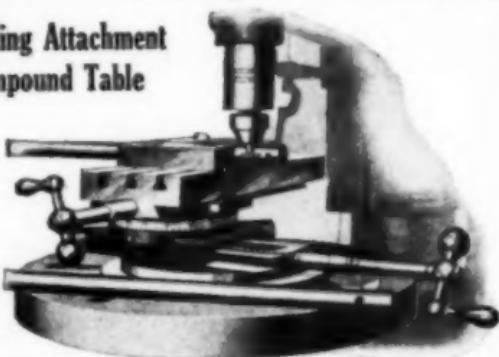
New Britain, Conn.

Makers of a Complete Line of Chucks

See How Easily Attached

Davis Milling Attachment
and Compound Table

Converts
any Drill
Press from
14 to 42-in.
Swing in
2 Minutes



THE CONVENIENCE and economy is out of all proportion to its small cost, for it does most of the lighter milling as well as a big machine for the diemaker, patternmaker and small machine shop. Cuts keyseats, clutch jaws, slots, grooves and cams. It's an economizer of the highest class. Send for Booklet and price.

Hinckley Machine Works, HINCKLEY, ILL.



We manufacture a great variety of
Lathe Chucks, Drill Chucks, Centering Chucks
Also
Portable Jaws for Lathe face plates and Machine tables.

Let us send you our Catalog

The Cushman Chuck Co.
Established 1862 **Hartford, Conn.**

Tucker's Safety First



Style G



Open



Style C



Style F, Drive



Style A



Style D



Open



Clarification



Compression Grease Cup



Rotary Head

W.C. & F.C. TUCKER, Hartford, Conn.

The Shop's Best Tool

You do not know half the possibilities of a good jack in the shop until you use a Simplex.

Did you think any jack was a jack? Find out about the Simplex. Follow the lead of the mechanics all over America who are gradually coming to demand the jack of all jacks.

SIMPLEX JACKS

have special features for the mechanic, the shop superintendent, the autoist, the farmer.

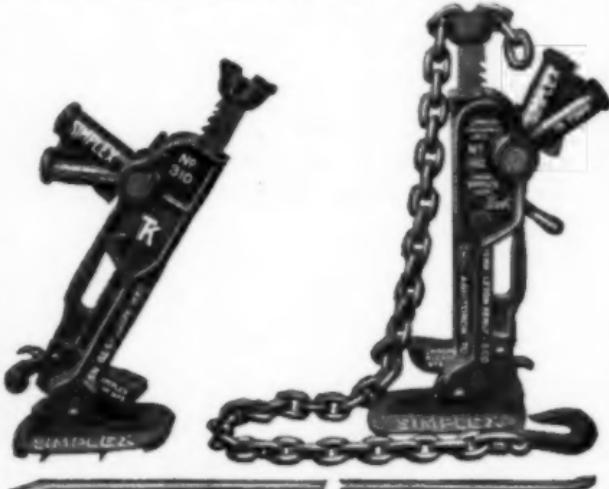
Let us show you some of the hundreds of things you can do with this almost human tool. Address

Templeton, Kenly & Co., Ltd.

Established 1899

Simplex Jacks for all Industries, Automobiles,
Railroads and Agriculture

1012 South Central Ave., Chicago, Ill.



One of the Simplex wonder tools
Does the work of crane and jack

Contract Work Wanted

This department is exclusively for those desiring machine, press or die work on contract. Advertisements must be set in uniform style, as shown, and without other display, or any variation in arrangement or in kind or size of type. The heading must express, as nearly as possible, the particular sort of work wanted, in order that any facilities offered may be easily found. Rates: one-eighth page, three months, \$12; one year, \$40.

Brass Finishing—Metal Patterns—Screw Mach. Products

Special brass work of every description, metal patterns and screw machine products. With a well-lighted shop, good tools and good mechanics, we believe we can satisfy you with our service. **B. W. Pokorney & Co., 132-134 S. Clinton St., Chicago, Ill.**

High Grade Machine Manufacturing

We are equipped to manufacture high grade specialties and intricate machines, such as typewriters, adding machines, etc. Can improve a defective design, producing a machine that will work and sell. We especially desire problems of this kind. Large facilities for small stampings. **Grand Rapids Brass Co., 66-90 Scribner Av., Grand Rapids, Mich.**

Tool and Die Work

Every kind, for which we have the machinery and skilled labor to produce results. We are equipped also for special machine work. Our particular specialty is high grade service. Can you use that kind? **Manhattan Brass Works, Grand Rapids, Mich.**

Sheet Metal Stamping, Dies and Tools

We solicit your inquiries for sheet metal stamping; manufacturing a specialty. We do electric plating. **Winter & Stryker, Grand Rapids, Michigan.**

Work for Your Idle Equipment

You can get it, if you will let manufacturers know just what you can do. Tell them through this department. The cost is small; the distribution covers the metal manufacturing people everywhere in the United States.

Metal Stampings—Dies, Tools, Jigs

Let us estimate on your work.
Lansing Stamping & Tool Co., Lansing, Michigan.

Castings and Forgings

Cast and forged specialties and novelties made to order in brass, bronze, nickel, German silver, iron or steel. We finish, electro-plate and japan. Send samples for estimate. **The Steffens-Amberg Co., Newark, N. J.**

CONTRACT WORK WANTED

Brass and Bronze Castings

We solicit your inquiries for brass and bronze castings. Will make liberal reduction in price on standing orders. Capacity, four tons per day. Or will sell or rent plant to responsible firm. **John L. Fitz Gerald, Brass Foundry, Albany, N. Y.**

Sheet Metal Stamping and Manufacturing

We solicit your inquiries for light sheet metal stamping and manufacturing of specialties. **O. D. Johnson Stamping Works, Batavia, N. Y.**

Pressed Steel Shapes

With our heavy hydraulic presses, we can handle any pressed steel shapes using $\frac{1}{4}$ -in. stock or heavier at a very reasonable production cost. Our modern facilities also enable us to do plate or structural work upon a basis of close economy. Your inquiry is solicited. **Greenville Steel Car Co., Greenville, Pa.**

Do You Want Contract Work?

If so, state in one of these spaces what you are prepared to do, and it will go into more manufacturing plants than if published in every mechanical journal in this country. The cost is low for a service covering metal-working plants of all kinds everywhere in the United States. **A. H. Hitchcock, Publisher, 1220-1235 Caxton Building, Chicago.**

Pressed and Stamped Steel Parts

It will pay you to let us figure on such pressed, stamped or drawn metal articles or parts as you may require, be they made of steel, aluminum, brass or copper. Our 15-acre plant at your disposal. Get the benefit of our "Knowing how since '81". Send samples or blue prints for estimate. **Geuder, Paeschke & Frey Co., Milwaukee, Wis., 1325-1700 St. Paul Av.**

Drop Forge Die Sinking, And Board Drop Hammer Forgings

Good facilities; can take on more die work immediately. Price small work all branches \$1.25 per hour; large work all branches \$2.00 per hour. Also prompt opening on some hammers for forgings. **C. Groos, Racine, Wis.**

Steel Novelties

We are well prepared to manufacture your steel novelties and devices at bed-rock cost for satisfactory work. Have a complete electro plating, galvanizing and tinning outfit. We make necessary dies from your drawings, also small brass castings. Work shipped on approval. Write for estimates. **Two Rivers Plating Works, Two Rivers, Wis.**

Tell Them What You Can Make

The more manufacturers who know just what you can do for them in the way of special contract work, the better your chance of getting orders. This department enables you to tell them all at least possible cost.

Want More Orders?

They are to be had for special contract work in machining, stamping, forging, casting, welding or any department of machine manufacturing. The problem is merely to bring the capacity and the demand for it together. If you have the idle capacity, and want work for it, the "Contract Work Wanted" department of the Tool List will help you to get in touch with machine-making plants everywhere in the United States. Its circulation among American metal working plants is country-wide. There is no other available means by which you can reach so many.

Don't let your equipment stand idle. That costs money—a lot more than it will cost you to find work for it. Write me for further information, and for a copy suggestion, which I shall be glad to make without cost or obligation.

A. H. Hitchcock, Publisher

Hitchcock's Machine Tool List
1220-1235 Caxton Building, Chicago, Ill.

H.B. UNDERWOOD

& CO. EST. 1870



Our Standard Boring Bar for Lathe Work can be quickly and securely bolted to the face plate, giving all the rigidity of the lathe and also centering that end of the bar. The bar can be removed and reset as often as required without changing original alignment. Continuous geared feed with two changes. Feeds automatically or by hand. Does perfect work and enables the whole power of the lathe to be used. Made in any size required.

Send today for illustrated catalog. You should have it.

PHILADELPHIA, PA.

Second-Hand Machinery.

Lists of Second-Hand Machinery, either for sale or wanted, set in uniform style, will be published under this heading at the rate of **40 cents a line**, across the page, each issue. Minimum charge, **\$4.00**. Sub-headings are counted as one line, but the name and address of advertiser are not included in the space charged for. No display in this department.

Write directly to the parties offering the machines for sale for prices and full descriptions. If you do not find listed what you require, use the post card inclosed with each book to make known your wants to the publisher.

FOR SALE BY

Wayne Machinery Co., Taylor St. & L. E. R. R., Fort Wayne, Ind.

Bulldozers, W. & W. (2).
Drill, No. 35-A H. & W., 3 sp., h. s.
Drill press, 20" Barnes, w. & l. f.
Drill press, 36" Aurora, p. f., b. g.
Engine lathe, 22x18 Michels.
Engine lathe, 13x6 South Bend.
Grinder, double disc, No. 10 Besly.
Grinder, surface, Woodward & R.
Grinder, emery & surf. No. 1 LaSalle.

Grinder, drill & emery, W. & M.
Planer, 26x26x8 Pond.
Planer, 36x36x8 Powell.
Shaper, 15" Gould & Eberhardt.
Shaper, 16" Ohio, back geared.
Shaper, 16" Steptoe.
Turret lathe, 8" P. & W.
Welding machine, No. 6-A Toledo
electric.

FOR SALE BY

Broadway Machinery Co., 236-238 Broadway, Cincinnati, Ohio

LATHES.

13"x6" Sebastian, h. s.
14"x6" American, c. r., h. s.
30"x30"x14' Miles, 2 heads.
23"x24"x6" Pond, 1 head.

14"x6" Silk Anderson, h. s.
26"x12" Barker Chard, h. s., c. r.
24" Smith & Mills, crank.
24" Steptoe, geared.

TURRET LATHES.

18"x6" L. & D. Monitor, b. g.
16"x6" American Monitor, b. g.
12"x5" plain turret.

15"x5" American (Fox).
8" Acme screw machine.

FOR SALE BY

Brown-McDonald Machinery Co.,

906-908-910 North Market Street, - - - - - St. Louis, Mo.

LATHES.

16"x10' Monarch, standard, new.
16"x 6' Hamilton, h. s., r. & f. r.

17"x 8' Fifield, h. s., p. r.

DRILLING MACHINES.

12" Acme, 1 spdl., $\frac{1}{2}$ " cap.
No. 4 Allen, 1 spdl., $\frac{1}{2}$ " cap.
Fox, 2 spindle, $\frac{1}{2}$ " cap.
Reed, 3 spindle, $\frac{1}{2}$ " cap.
20" Lodge & Davis, w. & l.

20" Superior, w. & l., new.
20" American, b. g. & p. f.
24" Bickford, sliding head.
24" Bickford, b. g. & p. f.

SHAPER.

15" American.

No. 70 Bliss, drawing.
10' Keene toggle press.

PRESSES.

No. 33 Swaine, inclinable.
No. 3 Swaine, foot.
American Can Co., foot, (3).

MISCELLANEOUS.

Cold saw, No. 2 Burr.
Cold saw, No. 2 Newton.
Cranes, 4, 5 & 8-ton, Northern Electric, 3 motors.
Friction saw, Ryerson, motor.
Large stock of Foot Square Shears, Folders, Seamers, Beaders, Crimpers and Sheet Metal Tools. Write for No. 102 Stock List.

Gear cutter, No. 11 Dwight-Slate.
Shear, No. 4, 8' Bertsch, 16 ga.
Slab milling and boring machine, Cincinnati.

Tapping machine, No. 1 Wells.
Folders, Seamers, Beaders, Crimpers

SECOND-HAND MACHINERY

FOR SALE BY

The Strong, Carlisle & Hammond Co., Cleveland, O., Detroit, Mich.

ENGINE LATHES.

12" x 5' Barnes, foot power.	18" x 10' Schumacher & Boye, c. r., h. s., (3).
13" x 6' Blaisdell, r. & f. rest, h. s.	14" x 8' foot power.
14" x 6' Bradford, q. c. g., c. r., h. s.	14" x 6' Sebastian, c. r., h. s.
14" x 6' Porter, r. & f. rest, h. s.	14" x 6' Fay & Scott, c. r., h. s.
16" x 6' Reed, r. & f. rest, h. s.	16" x 8' Steptoe, c. r., h. s.
16" x 8' Pratt & Whitney, r. & f. rest, 5" p., (2).	22" x 12' Fitchburg, c. r., s. p.
20" x 10' LeBlond, c. r., h. s.	17" x 6' Barker, c. r., h. s.

FOX LATHES.

14" x 6', square arbor, set-over tail-stock, (2).	18" Springfield, set over turret.
	20" American, universal turret.

TURRET LATHES.

No. 1 Warner & Swasey, 10" pl. hd.	No. 2 Bardons & Oliver, 10" pl. hd.
21" American, 24" cap., turret chucking, g. h. s. p. drive.	16" Warner & Swasey, plain head.

No. 3 Brown & Sharpe, internal.

Nos. 1 & 2 Landis, internal.

Gisholt tool grinder.

GRINDERS.

Warner & Swasey cock grinders, (2).

14", 20" & 30" wet grinders, (6).

MILLING MACHINES.

No. 2 Cincinnati universal.

No. 11 Braillard universal.

Garvin hand miller.

DRILLS.

36" Cincinnati, g. f., sliding head.

24" Cincinnati, sliding head.

32" and 36" Prentice, sliding head.

HAMMERS.

100 lb. Fairbanks, upright.

MULTIPLE DRILLS.

4-spindle Foote - Burt, adjustable spindle, (2).

5 spdl. Detroit horiz., semi-auto, (2).

GEAR CUTTERS.

34" Whiton, spur, bevel and worm.

36" and 40" Gould & E., spur, (2).

36" Cincinnati, spur.

PLANERS.

30" x 30" x 10' Gray, 2 rail heads.

30" x 30" x 10' Gray, 1 rail head.

36" x 36" x 10' Gleason, 1 rail head.

PRESSES.

No. 2 Ferracute dble. acting inc.

No. 205 Toledo, double crank.

BORING MILLS.

Barrett, horizontal.

BOLT CUTTERS.

24" Acme, single head.

SHAPERS.

16" Lutter & Gies, b. g. crank.

20" Hendey, friction.

24" Hendey, friction.

SAWS.

No. 6 Cochrane-Bly, 8" capacity, cold saw.

KEYSEATERS.

No. 3 Mitts & Merrill.

No. 0 Colburn, (Baker) (2).

PUNCHES AND SHEARS.

No. 12 Badger State, geared combination, plate splitting shear, power.

SECOND-HAND MACHINERY

FOR SALE BY

**Niles-Bement-Pond Company, 111 Broadway, New York.
Located at Chicago, Boston and New York.**

LATHES.

12" x 5' speed lathe.
12" x 5' P. & W., taper, old style.
14" x 6' Davis, compound rest.
16" x 7' P. & W., taper, old style.

16" x 8' P. & W., r. & f., old style.
22" x 22" Niles.
30" x 22" LeBlond, heavy duty.
44" P. & W. pulley lathe.

AUTOMATIC SCREW MACHINES.

1" Hartford, auto, stud machine.
1" Acme old style 4-sp. automatic.
5-16" Hartford 2-spindle automatic.

1" Hartford 2-spindle automatic.
1" Spencer single turret, auto.

BORING MACHINES.

51" Bullard, 2 heads, 220 v., d.c., motor drive.
72" Pond, 2 heads, slotting attachment.
76" Bullard, 1 regular head, 1 drill head, 220 v., d.c., motor drive.
84" Niles, 2 heads; 96" Niles, 2 heads.
100" Niles ex. heavy spec., 10' under tools, 220 v. d.c., motor drive.
10'-16' Betts, extension, 220 v., d.c., motor drive.
10'-16' Bement, extension, 220 v., d.c., motor drive.
10'-16' Niles, extension, 220 v., d.c., motor drive, 8' under tools.
3½" bar Binns horizontal, 8' table.
3½" bar Bement horizontal, 8' table.
4" bar Niles horizontal, 6' table.

SHAPERS AND SLOTTERS.

10" Miles old-style shaper.
12" Bement old-style shaper.
30" Morton draw cut shaper.

12" Bement slotter.
14" Niles slotter.
20" Niles slotter.

PLANERS.

22" x 22" x 6" Harrington hd. planer.
26" x 26" x 7" Niles, 1 head.
26" x 23" x 16" Miles, 2 heads.
30" x 30" x 6" Pond, 1 head.
30" x 30" x 6" Pond, 2 heads.
30" x 30" x 8" Whitcomb, 1 head.

30" x 30" x 11" Niles, 1 head.
42" x 42" x 14" Wood. & Powell, 4 hds.
60" x 60" x 20" Niles, 2 hds., old style.
10' x 10' x 30" Niles, 4 heads.
14" x 12" x 32" Niles, 4 heads, 220 volts,
d. c. motors.

DRILLING MACHINES.

13" 1 spindle sensitive, 110 v. motor.
10" 3 spindle sensitive, Sigourney.
17" 4 spindle gang, Jones & Lamson.
20" W. & L. plain.
21" Aurora, tapping attachment.
30" & 36" Gould & Eberhardt, sliding head.
No. 11 Pratt & Whitney multiple, 4" capacity.
No. 10 Pratt & Whitney multiple, 14" capacity, 10 spindles.
No. 1 Pawling & H. horizontal, belt drive.
No. 3 Pawling & H. horizontal, 220 v., d. c., motor drive.
Dallet & Prentiss portable drills.

RADIALS.

4' Barr, old-style.
4' Niles, plain.
4' Niles, universal.
5' Niles, plain.
5' Western, univ., 220 v., d.c., mtr. dr.

5' Pond, 220 v., d. c., motor drive.
5' Niles, universal.
6' Pond, heavy.
6' Niles, semi-universal.
7' Niles, universal.

RAILROAD MACHINERY.

79" Pond driving wheel lathe.
Bement double axle lathe.
Niles double axle lathe.

Bement car wheel lathe.
Niles hvy. car wheel lathe, like new.

MISCELLANEOUS.

Bolt cutter, 2½" National.
Cut-off machine, 4½" Starr.
Gear cutter, 24" Newark, spur gears.
Grinder, drill, 3" Sellers.
Grinder, 10x30 Landis.
Grinder, 12x96" Springfield.
Grinder, auto., for saw blades.
Grindstone, 34", iron frame.
Hack saw, Millers Falls.

Magnetic separator.
Miller, No. 0 LeBlond, plain.
Miller, No. 1 LeBlond, plain.
Miller, No. 2 Becker, plain.
Miller, No. 2 Cin., high power, pl.
Miller, No. 3 LeBlond, plain.
Miller, No. 3 B. & S. old style.
Rolls, 5" x 8" hand power.
Saw bench, 54x34, tilt. top.

SECOND-HAND MACHINERY

FOR SALE BY

Peninsular Machinery Co.,

Beading machines, hand and power.
 Drill, 26" W. F. & J. Barnes. b. g.
 Drills, 15" W. F. & J. Barnes.
 Drills, 10" Burke, sensitive.
 Drill, Foote-Burt, 4-sp., rail.
 Gear cutter, Gleason.
 Gear cutters, No. 3 and No. 13
 Brown & Sharpe.
 Gear generators, Bilgram.
 Gear tester, Gleason.
 Grinder, Oesterlein, universal.
 Grinder, Norton, tool and cutter.
 Grinder, Cochrane-Bly auto. saw.
 Hack saw, Miller Falls.
 Keyseater, No. 2 Mitts & Merrill.
 Keyseater, No. 2 Baker.
 Keyseaters, No. 1 & No. 2 Davis.
 Key lathe, 12" Cobb, double end.
 Lathe, 20" Libby, turret.

Write for complete description and price. Immediate delivery.

110 Beaubien St., Detroit, Mich.

Lathe, 20" American, turret.
 Lathe, 14" x 6' Reed, actual 16".
 Lathe, 13" x 5' Silk, c. r.
 Lathe, 14" x 6' American.
 Lathe, 20" x 16' LeBlond, hvy. duty.
 Lathe, 21" Gisholt, turret.
 Lathe, 24" Garvin, special turret.
 Miller, No. 3 Cincinnati, pl., all fds.
 Planer, 24" x 24" x 6' Gray, single hd.
 Planer, 30" x 30" x 8' Gray, single hd.
 Polishing lathes, all sizes.
 Press, No. 4 Consolidated, o. b. i.
 Press, No. 52 Toledo, blanking.
 Press, No. 5 Perkins, geared.
 Radial drill, 34" Cincinnati-Bickford.
 Radial drill, 36" American, sensitive.
 Kadal drill, 6', wall type.
 Rolls, 48" hand power, P. S. & W.
 Screw slotter, Garvin.

FOR SALE BY

A. D. White Machinery Co. - 108-114 N. Jefferson St., Chicago

ENGINE LATHES.

14" x 5' Putnam, (2).
 16" x 6' Flather, taper.
 16" x 8' Prentice.

14" Barr sensitive.
 20" Blaisdell.
 28" Barnes, sliding head.
 28" Bickford, sliding head.
 30" Kerkhoff, sliding head.
 32" Bickford, sliding head.

PLANERS AND MILLING MACHINES.
 24" x 6' Pond.
 24" x 6' Hamilton.
 32" x 8' Betts.
 35" x 12' Niles, 2 heads.
 No. 26 Brainard plain miller.

No. 2 R. & K., o. b. i. (3).
 No. 1 Consolidated, o. b. i.
 No. 16 Wold.
 No. 40 and No. 45 Crosby.
 No. 5 Niagara, o. b. i.
 No. 5 Norton.

TURRET LATHES AND SCREW MACHINES.
 18" American turret lathe.
 28" Pond rigid turret lathe.
 30" turret lathe.
 4" National-Acme full auto. (2).
 4" Hartford, (3).

MISCELLANEOUS.
 Bolt cutters, 1 1/2 & 3" National, s. hd.
 Centers, 10" Garvin.
 Grinder, drill, Yankee style B.
 Grinder, disc, 30" Ransom.
 Keyseater, 16" Morton, portable.
 Pipe machine, 2" Jarecki.
 50 h. p. Gas Producer Plant, with 50 h. p. Fairbanks-Morse engine.

DRILL PRESSES.

34" Barnes, sliding head.
 40" Aurora radial.
 72" Fosdick universal radial.
 3-spdl. Wood & Rogers sensitive.
 8-spindle Valley City multiple.
 12-spindle Bausch multiple.

PUNCH PRESSES.

No. 3 Fox, hand and power fd., (2).
 No. 12 Garvin, plain, (2).
 No. 6 Whitney hand miller.
 No. 9 Kempsmith, plain.
 No. 6 Grant, mfg. type.

King power forcing press.

600-ton American Can, toggle embossing press.

Cleveland automatic.

1" Cleveland semi-auto.

No. 1 P. & W., hand.

No. 2 P. & W., hand.

24" Cleveland automatic.

Riveter, 3-16" Adt.

Saw, univ. cut-off, No. 2-B, Q. & C.
 Shapers, 16", 18" and 24".

Shear, No. 107 Niagara, grd. slitting.
 Shears, pr. sq., Niagara 242 & 142.

Tapper, No. 2 Garvin horizontal.

SECOND-HAND MACHINERY

FOR SALE BY

Marshall & Huschart Machinery Company,

Chicago - Indianapolis - St. Louis
17 S. Jefferson St. 334 N. Capitol Ave. 915 Chemical Bldg.

BOLT CUTTERS.

No. 2 Detrick & Harvey double head nipple machine.
No. 2 Adams bolt cutter.

BORING MACHINES.

No. 1 Barrett cylinder borer.
Pearson horizontal.
48" Niles car wheel borer, for 36" wheels.

DRILLING MACHINES.

10-sp. Natco multiple, capacity ten 5-16" drills.
16" 2-spindle Kokomo sensitive.
20" Mechanics, friction.
21" Sibley, stationary head.

RADIAL DRILLS.

24" Fosdick, plain.
30" Gang, plain.
36" Dresses, plain.
36" Niles, plain.

GEAR CUTTERS.

15" Gleason bevel gear planer.
Adams gear hobber.
No. 13 Brown & S., spur and bevel.
16" Bilgram gear generator.
22" Gould & E., spur and bevel.

GRINDERS.

No. 2 Bath duplex.
Gisholt tool grinder.

ENGINE LATHES.

No. 4 precision bench lathe, compound slide rest.
14"x6' LeBlond, qk. chg., with taper.
14"x6' Reed, rise and fall.
16"x9' Reed, plain rest, taper.
17"x6' Bradford, compound rest.
18"x5' Putnam, compound rest.
18"x10' Walcott, with chuck.
18"x14' Lodge & Davis, with chuck.

TURRET LATHES.

16" Pratt & W., pl. hd., pan bed.
16" W. & Swasey, pl. hd., pan bed.

SCREW MACHINES.

1" Pratt & Whitney, wire feed.
1" Pratt & Whitney, wire feed.
No. 1 Bardons & Oliver, 13-16" cap.

MILLING MACHINES.

No. 4 Brainerd plain.
No. 15 Garvin plain.
36" South Bend, Lincoln type.
No. 3 Oesterlein.
No. 1 Cincinnati plain, cone type.

PLANERS.

22"x22"x 5' Pond.
30"x30"x10' Gleason.

36"x36"x10' American.
48"x48"x12' Pond.

SHAPERS.

12" Rockford, crank.
14" Springfield, crank.
14" Steptoe, crank.
16" Ohio, crank.

26" American triple geared, shifting belt.
26" Walcott, actual stroke 28", shifting belt.

SECOND-HAND MACHINERY

FOR SALE BY

The Motch & Merryweather Machinery Company.
707-715 Lakeside Av., N. W., - - - - - Cleveland, Ohio

Branches: Detroit, Cincinnati, Pittsburgh.

Partial List of Re-fitted and New Machinery for Immediate Delivery

BORING MILLS.

16' Niles, double head vertical, 2 heads. 4 $\frac{1}{2}$ " Bullard vertical, 2 heads.
 2 heads. 4 $\frac{1}{2}$ " bar Bement-Miles, horiz., (2).

GEAR CUTTERS.

26" No. 3 Brown & Sharpe. 33" Gould & Eberhardt.

8' Pond, heavy pattern, (2). RADIAL DRILLS.

26" No. 3 Brown & Sharpe. HIGH-SPEED DRILLS.

No. 29 Foote-Burt drills, (5).

LATHES.

26"x48"x16" McCabe, triple grd., new. 10"x43" Bement-M. crankshaft turning lathe, heavy pat., good as new.
 50"x18" Fifield, triple geared. 3 $\frac{1}{2}$ "x34" Lo-Swing.
 60"x46" Hewes & Phillips, tri. grd.

MILLER AND SHAPER.

No. 4 Cincinnati hi-power vertical miller.

24" Gould & Eberhardt shapers, (6).

PLANERS.

24"x24"x6" Chandler, new, (2).

24"x24"x6" Gray, new.

26"x26"x6" Gray, new, (2).

26"x26"x7" Gray, new.

38"x38"x8" Gleason, 2 heads.

12"x10"x26" Pond, 4 heads, heavy pattern, excellent condition.

SAWS.

6" capacity Nutter-Barnes cold saw, new. 6" Espen-Lucas cold saws, (2).

40" Espen-Lucas cold saw.

FOR SALE BY

Cyril J. Bath, - - - - - 340 Leader-News Bldg., Cleveland, Ohio

Machine Tools—Good Condition—Prompt Delivery

BORING MACHINES.

16' Niles boring mill, 2 heads, 10' table, good.

Heavy vert. boring mchs. for hvy. forge work, sw. 14', bore up to 2' holes, (3).
 Baker single spindle heavy duty boring machine, style "M".

DRILLING MACHINES.

12" Reddington, sliding head, 1/2" capacity, good, (3).

4-spindle Foote-Burt, 14" sensitive drill press, good.

26" Aurora sliding head drill press, back geared, belt feed, round swivel table, very good.

2' Cincinnati-Bickford radial drill press, gear feed, cone drive, complete and in first class condition.

7' Niles heavy duty plain radial, outboard support to column, good cond.

LATHES.

12"x5" Star, rise and fall rest, in fair shape.

14"x6" Blaisdell, rise and fall rest, belt feed, good.

17"x6" Flather, plain rest, belt fd., cone dr., complete with chuck, good cond.

24"x25" American shaft turning lathe, hollow spindle, back geared, belt feed.

48"x20" Fifield compound rest, triple geared, old style, cheap.

50"x36" Hewes & Phillips comp. r., triple geared, complete and in good shape.

60"x43" Hewes & Phillips, compound rest, taper attachment, triple geared, complete and in good condition.

120"x45" Niles crankshaft turning lathe, complete with weights, cheek turning rests, and all equipment, very good.

SLOTTERS.

10" Putnam, crank, good.

24" Niles, shifting belt, fair. 30" Pond, crank, good.

54" Hewes & P., shifting belt, good.

MISCELLANEOUS.

Chucking machine, 5" Prentiss, 5-spindle automatic, good.

Cut-off saw, 50" Espen-L. almost new.

Gear shaper, 24" Fellows, very good.

Hammer, power, No. 4 Beaudry, very good.

Shaper, 16" Steptoe single geared crank, almost new.

SECOND-HAND MACHINERY

FOR SALE BY

Prentiss Tool & Supply Co., New York, Boston, Buffalo, Syracuse.

BORING MACHINES.

54" Detrick & Harvey, vertical.
 72" J. Morton Poole, vertical, swivel heads, plain table.
 48" Bement, car wheel borer.

DRILLING MACHINES.

2-spindle, Henry & Wright.
 4-spindle, Taylor & Fenn.
 21" Cincinnati, back gears, tapping attachment.
 32" Gould & Eberhardt, sliding hd.

GRINDERS.

Springfield double end, plain surface.
 Bath duplex, internal.
 No. 8 Gorton, 18" universal disc.

LATHES.

16"x12' Reed, compound rest.
 18"x10' Draper, compound rest.
 20"-42"x12' Fay & Scott, extension gap.
 26"x16' Pond, compound rest.
 26"x22' New Haven, plain turning.
 30"x22' Le Blond, compound rest.
 36"x12' Gleason, compound rest.
 36"x16' Putnam, triple geared.

MILLING MACHINES.

No. 12 Garvin, plain.
 No. 3 Cincinnati, plain.
 No. 4 Brown & Sharpe, plain.
 No. 24 Brown & Sharpe, plain.
 No. 21 Garvin, plain.

PLANERS.

15"x15"x 3' Pratt & Whitney.
 24"x24"x 8' Lathe & Morse.
 24"x24"x 6' L. W. Pond.
 24"x24"x 6' Whitcomb.
 26"x26"x 7' Whitcomb.
 26"x26"x 8' Pond.

PRESSES.

4B Mossberg, inclinable.
 No. 5 Perkins, not inclinable.
 P-2 Ferracute.

20" Burke slitting saw.
 No. 4 Robertson, hack, motor.

15"x24" Hendey, friction.
 16" Gould & Eberhardt.
 16" Stockbridge, crank.

SCREW MACHINES.

3" Bardons & Oliver, wire feed.
 24" American "Couradson."
 18" Springfield.
 15"x5" Roberts, chasing bar.
 13" Dreses, plain monitor.

MISCELLANEOUS.

Balancing machine, running, 44" Norton.
 Bolt cutter, double, 2" Acme.
 Bolt cutter, single, 6" Acme.
 Bulldozer, No. 1 Rock River.

2-spindle Foote-Burt cylinder borer.
 No. 5C Binsse, 3 $\frac{1}{2}$ " bar.
 No. 3 $\frac{1}{2}$ B Binsse, 3" bar.

DRILLING MACHINES.

32" Cincinnati, sliding head.
 36" Bickford plain radial.
 36" Taylor & Fenn, sensitive radial.
 10-spindle Gardam, adjustable multiple.

GRINDERS.

No. 26 Besly, 18" double disc.
 12" Bay State piston ring.
 No. 60 Heald cylinder.

LATHES.

38"x20' Fay & Scott, comp. rest.
 42"x20' Glascow, triple geared.
 25"-46"x11' gap speed lathe.
 24"x8" Harrington, spinning.
 11"x18' Union Iron Works, pit.
 18"x8" Reed, compound rest.
 16"x8" Prentice Bros., comp. rest.
 16" Stevens pulley turning.

MILLING MACHINES.

No. 2 Fox, hand.
 No. 1 Brown & Sharpe, old style, universal.
 No. 2 Garvin, universal, bk. gears.
 No. 7 Becker, Lincoln pattern.

PLANERS.

30"x30"x10' Bement, 2 heads.
 36"x36"x18' Pease, 2 heads.
 52"x42"x12' Cincinnati 2 heads.
 60"x50"x10' Gray, 2 heads.
 60"x60"x15' Sellers, 3 heads.
 72"x72"x14' L. W. Pond, 2 heads.

PRESSES.

60-ton Watson-Stillman hydraulic.
 No. 3 Stiles.
 E 12 Ferracute, inclined.

SAWS.

30" Wright, metal band.
 Nos. 1, 2 and 3 Espen-Lucas.

SHAPERS.

18" Perkins, friction.
 24" Gould & Eberhardt.

SCREW MACHINES.

15" Gage, chasing bar.
 18" Cleveland, (3).
 18" Gridley.
 24" Hartford.
 Fay automatic.

MISCELLANEOUS.

Keyseater, No. 0 Baker Bros.
 Pipe threading machine, 8" Eaton-Cole-Burnham.
 Profiler, 2-spindle, No. 2 Pratt & Whitney.

SECOND-HAND MACHINERY

FOR SALE BY

The Machinery Warehouse, 3705 S. Ashland Ave., Chicago, Ill.

90"x54"x39' Sellers.
56"x42"x16' Gray.
44"x44"x12' Pond.
42"x42"x14' D. & H.

Any of the above tools can be rebuilt and shipped in one week. Some are ready for immediate shipment.

PLANERS.

40"x40"x14' Putnam.
36"x36"x14'6" Sellers.
36"x36"x8' Gleason.
32"x32"x9' New Haven.

FOR SALE BY

McCoy-Brandt Machinery Co.,

Boiler, 250 h. p. Heine water tube, with heater.
Boilers, 100 h. p. Erie Economic, (2).
Boiler, 150 h. p. Erie return tubular.
Bulldozers, Nos. 1, 2, 4, 5, 6 and 12.
Crane, 60-ton, 60' span, 220 v., d. c.
Electric weld. generators, 15,60 k.w.
Generator, 100 k.w., 500 v., d.c., connected to McEwen steam engine.
Generators, 100 k.w., 250 v., connected to steam engines, (3).
Generator, 250 k.w., 250 v., d.c., connected cross comp. steam engine.
Hammer, Bradley 75 lb. upright strap.
Hammers, board drop. 400, 500, 600, 800, 1000, 1200, 2000, 3000 lb.

410 House Bldg., Pittsburgh, Pa.

Hammer, 200 lb. Lingle, belt driven.
Hammers, steam, 600, 800, 1000, 1300, 1500, 2000, 3500, 6000, 10,000 lb.
Lathes, single purpose, 18"x8" (new).
Lathe, 15"x6' American, h. s.
Lathe, 16"x6' Prentiss, p. r., h. s.
Lathe, 16"x8' Blaisdell, c. r., h. s.
Mine locomotive, 7½ ton M-G, 250 volts, 42".
Pipe machines, 2", 4", 6", 8" and 10".
Presses, hydraulic, 100 ton, 18", 20" strokes.
Press, o.b.i., wt. 12,400 lbs, 5" stroke.
Press, Bliss toggle, 405 spl., 8" stroke.
Shears, guillotine type, cap. 4" sq.
Large list. Quick shipments.

FOR SALE BY

C. Groos, 16th & Owen Ave., Racine Junc., Racine, Wis.

In changing equipment to enlarge dimensions of product, I have for sale the following machines which until recently were in active operation; are subject to inspection on own foundation and offered as is. Terms are strictly cash with order less 5%, or one-half cash with order and balance draft against bill of lading—all prices f. o. b. C. M. & St. P., Racine Junction. For sale by the owner, C. Groos, or Badger-Packard Machinery Co., Milwaukee or Racine, Wis.

HAMMERS.

1—Yeatley air hammer; self-contained compressor; good heavy machine; 24" driving discs with 2½" shaft; height o. a. 5' 9"; floor space 5' x 3'; good condition.	8100.
1—800-lb. Miner & Peck auto. friction board drop hammer; between uprights 16"; height uprights 7' 6"; front to back at top of anvil 16"; pulleys 32"x8"; rolls 8½" diam. by 10½" face; very good condition	500.
1—600-lb. auto. board drop hammer; between uprights 14"; height uprights 6' 6"; front to back at top of anvil 14"; pulleys 28"x8"; rolls 7" diam. by 7½" face; excellent condition	450.
1—600-lb. Miner & Peck auto. friction board drop hammer; between uprights 11½"; height uprights 6'; front to back at top of anvil 16"; pulleys 23½"x5½"; rolls 7½" diam. by 8" face; excellent condition	400.
1—400-lb. Chas. Merrill & Son friction board drop hammer; between uprights 10"; height uprights 7' 6"; front to back at top of anvil 13"; pulleys 30"x7½" face; rolls 9½" diam. by 8" face; good condition	250.
1—400-lb. auto. board drop hammer; between uprights 14"; height uprights 7'; front to back at top of anvil 14"; pulleys 24"x8½"; rolls 8" diam. by 8" face; fair condition	150.

MISCELLANEOUS.

Bolt header, 1" Acme Machinery Co., Cleveland; very heavy; fly wheel 48" diam. by 5½" face	2200.
Punch press, Evans, heavy pattern; 4½" shaft; 48"x6" fly wheel; 2" stroke; excellent condition.	250.

SECOND-HAND MACHINERY

FOR SALE BY

Rumely-Wachs Machinery Co., 121 N. Jefferson St., Chicago, Ill.
ENGINE LATHES.

14" x 4 $\frac{1}{2}$ " Putnam.
14" x 6" LeBlond, c. r. taper.
16" x 8" Flather, c. r.
18" x 8" Bradford.
18" x 8" Reed.

18" x 10" Schumacher & Boye.
20" x 10" Fifield.
24" x 10" Bradford.
25" x 12" Reed.
36" x 16" Fifield.

TURRET LATHES.

15" American, Fox Monitor.
24" Gisholt, chucking, 3 $\frac{1}{2}$ " bore.
24" Cleveland, automatic, (2).
1" Cleveland, automatic, (3).

1" Brown & Sharpe auto., (8).
1" Cleveland, automatic.
1" Lavigne, (4).
1" Acme, multiple spindle.

GRINDERS.

Grindor, cup, 14" Springfield.
Grinder, cup wheel, 14" Diamond.
Grinder, disc, 18" Gorton.

Grinder, disc, 20" Ransom.
Grinder, tool, No. 3 Brown & S.
Grinder, tool, Gisholt universal.

DRILLING MACHINES.

14" Barr sensitive.
14" Slate sensitive.
3" Morris radial, gear box.
5" Prentice radial, cone drive.
20" Barnes, upright.
20" Davis, b. g., upright.
28" Sibley & Ware.
20" Silver, lever feed.

20" Barnes, b. g., p. f.
4 and 6 spindle Barnes, automatic,
approach and return.
28" Barnes, upright.
31" Barnes, upright.
Barnes No. 1, horizontal.
21" American, power feed.

MILLING MACHINES.

No. 2 Fox hand.
No. 3 Fox hand and power.

No. 3 Newton plain.
No. 7 Becker, Lincoln.

PLANERS.

16" x 16" x 4' Lathe & Morse.
22" x 22" x 5' Wheeler.
36" x 36" x 8' Fitchburg.

36" x 35" x 15' Woodward & Powell,
2 heads.

PRESSES.

No. 18 Bliss, open back inclinable.
No. 19 Bliss, open back inclinable.
No. 42 Bliss, open back inclinable.
No. 4 American Can, open back inclinable.
No. 4 Walsh, open back inclinable.
No. 44 American Can, open back inclinable.

No. 5 Bauroth, open back inclinable,
geared.
No. 94 Sheffler, solid back.
No. 94A Toledo, double crank grd.,
40" bet. housing, wt. 22,000 lbs.
No. 69-N Bliss, double acting.
No. 40 Crosby, open back.
No. 12-A Adriance, double acting.

BOLT CUTTERS.

1 $\frac{1}{2}$ " Acme.
2 $\frac{1}{2}$ " Acme.

3 $\frac{1}{2}$ " Acme.

KEYSEATERS.

No. 2 Mitts & Merrill.
No. 3 Mitts & Merrill.

No. 3 Baker.

MISCELLANEOUS.

Cornice brake, 8' Keene.
Pipe machine, 4" Jarecki.
Punch, Kling, 19" throat.

Slitter, 12" Wachs vertical.
Splitting shear, No. 1 Badger State.
Saw, 24" Lucas structural.

The above is only a small portion of our stock on hand, and we have eight car loads on the way additional.

Let us know your requirements, maybe we can furnish just what you want.

SECOND-HAND MACHINERY

FOR SALE BY

Clark Machinery Co., 717 Frankfort Ave., N. W., Cleveland, O.

Blowers, No. 1 Root, (2).
 Cutting-off machines, 2¹/₂" and 3".
 Drill, 20" Barnes.
 Engine lathe, 12" x 5' Prentice.
 Gear cutter, No. 13 Brown & Sharpe.
 Grinder, disc, No. 8 Besly.
 Grinder, disc, No. 10 Besly.
 Grinder, surf., Springfield, planer type.
 Grinder, No. 2 B & S. universal.
 Hammers, helve. 25, 40 & 60 lb. Bradley.
 Keyseater, No. 2 Davis.
 Keyseater, No. 6 Mitts & Merrill.
 Lathes, Bridgeport auto. thread'g (4).
 Lathe, precision, 9" Cata. act.
 Miller, plain, No. 21 Becker-B.
 Miller, universal, No. 1 B. & S.
 Miller, slab, 22" Ingersoll, 44" table.
 Planer, 24x24x6 Hendey.
 Planer, 30x30x8 Enterprise.
 Saw, No. 13 Cochrane-Bly.
 Shaper, 20" Smith & Mills.
 Shaper, 15" Hendey.
 Spinning lathe, 22" Prybil.

FOR SALE BY

Enterprise Machinery Co.,

Boring mill, hor. 5' bet. cen. 2' dia. \$400.
 Buffer, bench, 3 spindle 10.
 Die filer, on cabinet base 35.
 Drill, 3-spdl., lever feed, slid. hd. 75.
 Drill, hi-speed, H. & W., ball b. 88.
 Drill, 28" Barnes, p. f., b. g. 135.
 Drill, 32" Barnes, p. f., b. g. 175.
 Enam. oven, 8' x 8' x 7', piping ... 175.
 Grinder, heavy, 18" spdl., c. s. 25.
 Grinder, knife and disc 60.
 Grinder, race, ball bearing 60.
 Hammer, drop, W. & W., 125 lb. 100.
 Lathe, Mann, 11x36, rebuilt 100.
 Lathe, bench, scr. cut., collets, c. r. 110.
 Lathe, turret, 24", h. s., cut-off 80.

523 Monroe St., Chicago

Lathe, 14x6 Flather, c. r., p. c. f., ck. \$235.
 Lathe, 30" x 12", c. r., s. r. 300.
 Lathe, 34" x 12", c. r., s. r., ck. 300.
 Miller, 7" x 20" table, good cond. 90.
 Miller, 4¹/₂ Garvin, 3,000 lb. 375.
 Planer, 42" x 15", 2 heads 875.
 Punch, 56" bet. hsgs., d. b. g., - 245.
 Punch, N. Doty, 7" x 7", \$300; 4¹/₂ - 150.
 Screw mach., 24" semi-auto., w. f. 900.
 Shear, angle iron, 24", lever 25.
 Shear, square, 22", \$22; 30" 29.
 Shear, square, gap 48", 16 ga. - 75.
 Shear, sq., gap 5", 12 ga., pwr. 295.
 Surface plates, 42x80" \$40; 24x36" 25.
 500 other tools, all kinds; write us.

FOR SALE BY

W. L. Perkins, Jr.,

24" x 10' Putnam, c. r., cross feed.
 26" x 14' Putnam, c. r., cross feed.
 26" x 20' Reed, c. r., cross feed.
 26" Bridgeford axle lathe.
 28" x 14' Putnam, c. r., cross feed.
 30" x 10' Pond, c. r., cross feed.

30 Church St., New York

LATHES.

32" x 10' Putnam, c. r., cross feed.
 36" x 10' Pond, c. r., cross feed.
 52" x 12' Pond, c. r., cross feed.
 70" Sellers d. h. wheel lathe,
 80" Bement d. h. wheel lathe.
 90" Bement d. h. wheel lathe.

PLANERS.

42" x 42" x 30" Pond, 3 heads.
 42" x 42" x 30" Pond, 4 heads.
 48" x 48" x 20" Pond, 4 heads.
 56" x 56" x 12" Pond, 4 heads.
 56" x 56" x 16" Pond, 4 heads.
 60" x 60" x 14" Sellers, 2 heads.
 72" x 72" x 12" Sellers, 4 heads.
 72" x 72" x 34" Sellers, 4 heads.

BORING

MILLS.

84" Betts, double head.
 84" Niles, double head.
 84" Sellers, 1 head.
 90" Pond, double head.
 96" Niles, double head.

DRILLING MACHINES

6' Bickford, tapping.
 7' Baush, tapping.
 8' Pond, tapping.

42" Bullard, double head.
 51" Niles, double head.
 54" Colburn, double head.
 60" Pond, double head.
 60" Binsse, horizontal.

5' Dresses, tapping.
 5' Pond, tapping.
 5' Bickford, tapping.
 6' Pond, tapping.

SECOND-HAND MACHINERY

FOR SALE BY

The H. A. Stocker Machinery Co., 566-72 W. Randolph St., Chicago
GRINDERS.

12"x44" Modern plain.

12"x32" Landis plain.

12"x66" Landis universal, with extra head, with 10" magnetic chuck fitted, and large and small internal fixtures.

LATHES.

38"x18' Putnam, compound rest.

36"x18' Walcott, compound rest.

36"x12' Bradford, compound rest.

26"x14' Gleason, compound rest and taper.

24"x10' Hendey, quick change gears, compound rest and taper.

24"x10' Barker & Chard, compound rest and chuck.

18"x12' Flather, with turret on bed.

16"x8' Hamilton, compound rest and chucks, (3).

16"x8' Hamilton, quick change gear and taper.

16"x8' Hamilton, compound rest and chuck.

14"x6' Hamilton, compound rest and chuck.

14"x6' Robbins, with turret on bed.

14"x6' Perkins, compound rest.

10"x5' Pratt & Whitney tool lathe.

BORING MILLS.

42" King, 2 heads, plain table.

Franklin horizontal.

DRILLING MACHINES.

6' arm Dreses universal radial.

5' Western universal.

2' plain radial.

34" Barnes upright.

32" Mechanics upright.

28" Hamilton upright.

24" Hamilton upright.

30" smaller drills, various makes.

What size do you want?

PRESSES.

Large assortment of straight sided and inclinable, fly wheel and geared.

Let us have your inquiry.

SHAPERS.

All sizes 14" to 24"—some good ones.

SCREW MACHINES.

1" Cleveland automatic, (3).

1" Cleveland automatic.

Various hand screw machines.

TURRET LATHES.

24" Davis chucking lathe, with power feed to turret.

2"x24" Jones & Lamson flat turret lathe, cone head type, with bar outfit, good servicable condition.

2"x26" Pratt & Whitney, geared head, turntable type, full bar and chucking equipment—A1 condition.

Numerous smaller machines.

PLANERS.

62"x54"x52' Gray, 2 heads.

72"x48"x10' American, 3 hei is.

62"x48"x42' Gray, 2 heads.

44"x44"x12' Pond, 2 heads.

42"x42"x12' New Haven, 1 head.

42"x42"x14' D. & H., open side, with outer rolling table.

32"x30"x8' Gray, 2 heads.

30"x30"x 8' Cincinnati, 1 head.

Several smaller sizes.

SECOND-HAND MACHINERY

FOR SALE BY

Girard Machine & Tool Co., 491-493 N. Third St., Philadelphia, Pa.

Boring mills, turret head vertical, 36" Brown & Sharpe, (2).
Boring mill, vertical, 72" King, with two heads.
Boring mill, vertical, 72" Niles, with two heads.
Car wheel borer, 48" Bement, with crane.
Drills, upright, 36" Snyder, power feed, etc., heavy duty, (2).
Hammer, steam drop, 600-lb. Bement.
Planer, 40" x 40" x 12" New Haven.
Punch and shear, 30" throat Perkins, heavy, cap. 1" hole in 1" plate.
Radial drills, 48" and 36" Dreses.
Radial drills, 5" Bickford, (2).
Shaper, double head, 18" Cincinnati, with two tables on 12' bed.
Turret machine, 24" American, 2 1/2" hole through spindle.

FOR SALE BY

Badger-Packard Mch'y. Co., 72-74-76 W. Water St., Milwaukee, Wis.

DRILLING MACHINES.

10" Hoefer, sensitive.	26" Mechanics, sliding head.
24" Mechanics, sliding head.	28" Hoefer, sliding head.
24" Hoefer, sliding head.	

LATHES.

No. 4 Barnes.	16" x 6' Blaisdell, r. and f. rest.
12" x 6' Davis, r. and f. rest.	18" x 8' Blaisdell, compound rest.
14" x 6' Silk, compound rest.	24" x 12' Perkins, compound rest.
14" x 6' Lodge & Davis, pl. rest.	26" x 12' Reed.comp.rest,hollow spin.
14" x 8' Blaisdell, plain rest.	2" plain turret lathe.

RADIAL DRILLS.

2 1/2" Dreses-Mueller, plain.	4' Fish, plain.
3" Bickford, plain.	

PLANERS.

20" x 20" x 4' New Haven.	26" x 26" x 8' Merrill.
24" x 24" x 6' Lathe & Morse.	60" x 60" x 16' Niles.

FOR SALE BY

Frank Toomey, Inc.,

127 N. Third St., Philadelphia, Pa.

LATHES.

50" x 27' New Haven.	Conradson turret lathe, heavy, 31" hollow spindle, 40" swing.
30" x 18' Bement-Miles.	

PLANERS.

48" x 48" x 15' Sellers.	30" x 30" x 12' Cincinnati.
33" x 33" x 12' Woodward & Powell.	30" x 20" x 8' Whitcomb.
30" x 30" x 12' planer, modern.	12" Moore crank planer.

SHAPERS.

24" Steptoe, back geared.	12" Bement.
---------------------------	-------------

MILLING MACHINES.

26" x 12' slab, heavy pattern.	No. 13 Becker-Brainard universal.
No. 1 Brainard plain, table 12x48.	Several Lincoln type.

MISCELLANEOUS.

Bolt cutter, 1 1/2" National.	Pipe machine, 10" Bignall & K.
Boring & turn mill, 48" Sellers, 2 hds.	Pipe machines, 3" and 6" Curtis &
Bulldozer, No. 4 Williams & White.	Curtis, hand power, (2).
Drills, upright, 30" Prentice, (2).	Press, PG-3 Ferracutte.

Hammer, steam, 350 lb. Bement-Miles, single frame.

Hammer, steam, 3,500 lb. Bement-Miles, double frame.

Hammer, board drop, 500 lb. P. & W.

Pipe machine, 4" Saunders.

Pipe machine, 6" Cox.

Dynamos, motors, engines and boilers. Wood-working machines both new and second-hand. Send for our stock books.

SECOND-HAND MACHINERY

FOR SALE BY

Chas. Molitor Machinery Co.,

Drill, 4 spdl., heavy pattern.
Gap shear, 15" heavy, 36" square.
Keyseater, No. 6 Morton.
Keyseater and slotter.
Lathe, 26" x 16" Reed.
Lathe, 30" x 18" Putnam.
Lathe, 30" x 26" Ames.
Tinners' rollers, brakes, shears, punch presses and compressors.
100 other iron and woodworking machines, motors, etc.

215 S. Clinton St., Chicago, Ill.

Presses, arch, dbl. crank, 36" x 54".
Press, geared, Waterbury-F., 4" str.
Screw machine, No. 6 B. & S., auto.
Screw machines, 14" & 2" Hartford,
auto.
Shapers, 15" - 26", (6).
Wiring machine, universal, Yoder.

FOR SALE BY

The Osborne & Sexton Machinery Co., . . . Columbus, Ohio.

LATHES.

13" x 5' Reed, hollow spindle.
14" x 8' thoroughly rebuilt.
20" x 8' Prentice, h. s., c. r., taper.

21" x 8' Beaman-Smith h. s., c. r.
32" x 16' Niles, compound rest.
28" - 48" x 15" centers, Harrington.

SHAPERS AND PLANERS.

14" Hendey.
30" Morton, draw cut.
20, 22, 24 and 30".
Baker heavy duty, (2).
30" radial, plain, (2).

32x32x6" and 8" both Grays.
30x30x12" Pond, single head.

DRILLING MACHINES.

MISCELLANEOUS.
Broaching machine, 64" Waterbury.
Cold saw, Lucas, 8" capacity.
Hammers, helve, Bradley, 60 lb.
Hammers, fric. bd., 400,750 & 3,000 lbs.
Lathe, 18" American Fox.

Oil engine, 10 h. p. Alamo, new.
Press, o. b., No. 3 Crosby.
Rolls, shovel blanking, Toledo.
Screw machine, No. 2 B. & S., auto.
Screw machine, 12" Pratt & Whitney.

FOR SALE BY

E. L. Essley Machinery Co., 551-557 Washington Blvd., Chicago, Ill.

GRINDERS.

Greenfield, tap and die.
18" No. 7 Besly, double disc.
24" Leland-F., double wet tool, (2).
26" No. 1 Diamond automatic, face.
12x48 No. 3 Cincinnati universal.

1-spindle Warner & Swasey cock
grinder.
1-sp. Davis & Egan cock grinder.
6-sp. Milwaukee cock grinders, (2).

SCREW MACHINES.

7-16" National-Acme, 4 sp.
4" National-Acme, 4 sp.
12" Hartford, (2).

15-16" Cleveland auto.
2x24 Warner & S., hollow hex.
2" x 24" J. & L. flat turret, sliding hd.

MISCELLANEOUS.

Bending roll, power, 6" Niles.
Bolt cutter, 12" Acme, double head.
Bolt cutter, 12" No. 34 Wells, single.
Boring mill, 30" Bullard, (2).
Boring mill, 34" Colburn.
Boring mill, 42" Bullard.
Brake, 8" Keene, hand power.
Centering mch., 1-sp., 14" Whiton.
Centering mch., 2-sp., 8" P. & W.
Cutting-off machine, 3" H. & R.
Drill, 16 sp. Valley City multiple.
Drill, 2-sp. gang, 20" Mechanics.
Forming roll, power, 95" Bertsch.
Gear cutter, 20" Grant-Lees.
Gear cutter, 26" x 10" Cincinnati.
Gear cutter, bevel, 36" Brainerd.
Gear hobber, 12" No. 1 Adams.
Gear hobbers, 12" Reynolds.
Gear hobber, 18" No. 0 Rhenenia.

Gear shaper, 36" Fellows.
Hammer, helve, 40 lb. Bradley.
Key lathe, 13" W. & S., dbl. hd.
Keyseaters, No. 2 Mitts & M., (2).
Miller, No. 12 Brown & S. pl., (2).
Miller, No. 14 Cincinnati plain.
Oil separator, No. 1 American.
Oil separator, Reed & Curtis.
Pipe machine, 2" No. 2 Bignall & K.
Pipe machine, 6" No. 64 Merrell.
Planer, 36x36x10' American, 2 hds.
Planer, 36x36x10' Ohio, 2 heads.
Pulley lathe, 30" Cincinnati (Streit).
Pulley lathe, 36" Cincinnati (Streit).
Sprocket turning and boring ma-
chine combined, Baker Bros.
Sprue cutter, 6" Adt. power.
Valve millers, W. & S., 2 spdl.

SECOND-HAND MACHINERY

FOR SALE BY

The Sipp Machine Company.

Paterson, N. J.

HIGH SPEED RADIAL.

One W. E. Gang high-speed radial drill, used two days; price, \$375.

FOR SALE BY

J. L. Osgood,

Drills, friction, Barnes, (3).
Drills, high speed, Allen, ball. b., (3).
Drills, 20", back geared, (3).
Drill, 4 spindle slate.
Grinder, tool, Greenfield universal.
Lathe, 18"x6" Blaisdell, taper.
Lathe, bench, No. 3 Stark.
Lathe, 12"x6" LeBlond.
Lathe, 14"x6" Reed.
Lathe, 18"x6" Reed.
Lathe, 19"x8" LeBlond.
Lathe, 18"x6" Prentiss, geared head.

45 Pearl St., Buffalo, N. Y.

Lathe, 18"x8" Whitcomb-Blaisdell, double back geared, taper.
Miller, hand, No. 3 Garvin.
Miller, No. 1 LeBlond, universal.
Planer, 49"x40"x10" New Haven.
Press, power, Dodge, 24" wheel.
Screw machines, 8" Wells auto., (2).
Screw machines, 2" Hartford model M, (2).
Screw machine, 2 $\frac{1}{2}$ " Gridley, single spdl., auto., piston ring attach.
Shaper, 15" Hendey.

FOR SALE BY

Wm. C. Johnson & Sons Machinery Co.,

210-212 Washington Ave.,

St. Louis, Mo.

LATHES.

14"x12" Lodge & Davis.
18"x 8" Reed.
20"x 8" Wheeler.
20"x10" Steptoe.
22"-38"x8" Harrington gap lathe.
25"x12" Fay & Scott.

38 $\frac{1}{2}$ "x16' Fifield.
30"x20" New Haven.
44"x20" Bradford.
50"x20" New Haven, triple geared.
80"x18" heavy turning.

MILLING MACHINES.

No. 44 Becker, plain.

No. 26 Becker-Brainerd, plain.

32" Niles, turret head.

83" single head.

Horizontal, 3" bar.

Horizontal boring machine.

24"x24"x8" Gray.

SHAPERS AND PLANERS.

30"x30"x10" Pease.

56"x42"x8" Belmer.

32"x32"x12" Gray.

56"x42"x16" Gray.

48"x48"x12" New Haven.

16" Smith & Mills.

DRILLING MACHINES.

40" Niles, heavy pattern.

48" Walcott, fine condition.

8' arm wall radial.

15' arm wall radial.

AIR COMPRESSORS.

8x8 belted.

500' belted.

9x9x9 steam driven.

500' and 1,000' steam driven.

10x10x10 steam driven.

1700' steam driven.

3 h. p., 110 volt, d. c.

15 h. p., 3-phase, 60 cycle.

5 h. p., 110 volt, d. c.

100 h. p., 3-phase, 60 cycle, (2).

7 $\frac{1}{2}$ h. p., 110 volt, d. c.

MOTORS.

1500' steam driven.

MISCELLANEOUS.

Angle shear, dbl., L. & A., size B.

Hammer, Yeakley, 80 lb.

Arbor press, No. 34 Greenard.

Jack, hydraulic, 50 ton.

Bolt cutter, 12", double head.

Jacks, Simplex, 12 and 15-ton.

Bolt cutter, 2" Schlenker.

Keyseater, No. 0 Baker Bros.

Brake, No. 14 Dreis & Krump, 10'.

Punch press, heavy, dbl. housing.

Cold saw, No. 4 Cochrane-Bly.

Punch and shear, 48" throat.

Grinder, universal, Cincinnati.

Rivet machine, continuous, 1".

Grinder, portable electric.

Wood trimmer, Oliver No. 3.

Hammer, steam, 250 lb.

Wood lathes, (3).

Hammer, steam, 600 lb.

SECOND-HAND MACHINERY

FOR SALE BY

The Patterson Tool & Supply Co., • • • Dayton, Ohio

PLANER.

48"x48"x16' Wm. Gleason, Rochester, N. Y., double head planer; good order, \$1,500.

A CHAIN

The advertisers in the Tool List pay Hitchcock. He sends you the Tool List free. You buy the articles advertised. The chain is complete.

BUT—

—suppose the advertisers do not know that you saw it in the Tool List—where does Hitchcock come in? When writing to advertisers, won't you kindly give Hitchcock credit?

1 Canton Crane Equals 6 Men

Economical, Safe, Convenient



Is it economy not to invest a few dollars in a Canton Portable Crane and Hoist, and have from six to ten men strain every muscle to do what one man with a Canton can do with ease and safety? Think it over.

We will gladly send one on 30 days' free trial, so you can see how well it handles heavy machinery, awkward castings, etc. Made in several regular and special sizes, and furnished, if so desired, with double gears at small extra cost.

CANTON FOUNDRY & MCHE. CO., Canton, O.

We are making some changes in our equipment and we offer at very reasonable prices, the following:

One 28-36" x 14' New Haven Engine Lathe, not screw cutting.

One 32" x 18' Gray Lathe, four step cone, single back gear, screw cutting. Excellent condition, immediate shipment.

The Greaves-Klusman Tool Co.
Cincinnati, Ohio

In replacing our manufacturing equipment we find the following first-class

Used Machine Tools which we offer at attractive prices

GRINDER

No. 701—No. 210 Heald ring and surface grinder.

DRILLING ATTACHMENT

No. 1379—Universal swivel table for radial drill.

PLANERS

No. 258—72" x 72" x 30' Niles planer, four heads.

No. A—30" x 30" x 10' Detrick & Harvey open side planer.

No. B—36" x 36" x 12' Niles single head planer.

GRINDING STANDS

No. 683—Mueller grindstone and frame.

No. 661—Globe tool sharpener for $\frac{1}{2}$ " x 6" wheels.

No. 690—Marion buffering machine.

MISCELLANEOUS

No. 1401—Gleason mitre gear tester.

No. 1690—Rockford Drilling Co.'s straightening machine.

No. 515—Oliver No. 3 wood trimmer on pedestal.

No. 1363—E. H. Mumford split pattern molding machine.

No. 1607—Bowscher balancing ways.

No. 1168—No. 5 power arbor press.

No. 1336—No. 00 Monogram Sturtevant blower.

No. 2531—Sturtevant blower.

No. A-2033—Laidlaw-Dunn-Gordon duplex feed pump.

No. 1101—Towsley hand screw press.

The Lodge & Shipley Machine Tool Co.
Cincinnati, Ohio, U. S. A.

"New York's Greatest Clearing-House—J. J. McCabe"

"New York's Lowest Prices"

It's best to look at these

PLANERS

**—only by inspection can you
appreciate that they are**

**The best lot of High-grade Modern Ma-
chines available for Immediate Delivery**

Planers

76" wide, 76" high, 14' table, Pond Mch. Tool Co.
2 hds., Wt. about 60,000 lbs., still set up.
72" wide, 60" high, 26' table, Fitchburg Mch. Wks.
4 hds., built for fine work, in toolbuilder's shop,
Wt. about 88,000 lbs.
72" wide, 72" high, 14' table, Pond Mch. Tool Co.
3 heads, Wt. about 60,000 lbs.
60" wide, 60" high, 18' table, Woodward & Powell,
4 heads, Wt. about 55,000 lbs.
60" wide, 60" high, 14' table, Wm. Sellers & Co. 4
heads, spiral drive.
60" wide, 60" high, 12' table, Pond Mch. Tool Co.
4 heads, extra heavy.
56" wide x 56" x 12' Pond Mch. Tool Co. 4 heads.
48" wide x 48" x 20' Pond Mch. Tool Co. 4 heads.
48" wide x 48" x 16' Pond Mch. Tool Co. 3 heads.
48" wide x 38" x 10' New Haven, 1 head.
44" wide x 44" x 10' Pond Mch. Tool Co. 2 heads.
38" wide x 38" x 12' New Haven, 1 head.
38" wide x 38" x 8' Niles Tool Works, 4 heads.
36" wide x 36" x 20' Pond Mch. Tool Co. 3 heads.
36" wide x 36" x 12' Wm. Sellers & Co. 2 heads.
36" wide x 36" x 12' G. A. Gray Co. 1 head.
36" wide x 36" x 10' Wm. Sellers & Co. 4 heads.
36" wide x 36" x 10' Woodward & Powell, 3 heads.
36" wide x 36" x 8' Niles Tool Works, 2 heads.
36" wide x 36" x 8' Bement-Miles Co. 2 heads.
36" wide x 36" x 8' Pond Mch. Tool Co. 1 head.
32" wide x 32" x 12' Pond Mch. Tool Co. 2 heads.
28" wide x 28" x 8' Pond Mch. Tool Co. 1 head.
24" wide x 24" x 8' Fitchburg, 1 head.

"Newton" 40-inch Rotary Planer

Rotary-head, 46" diam., carries 40 tools, with automatic feed along bed about 10'. Motor direct connected. Cost, new, \$4,400. Practically new.

Large Horizontal Boring Machine

"Bement" floor type horizontal boring, drilling and milling machine, 8" traversing spindle can be raised to column 10'. Column carrying spindle and working parts has automatic feed 24' along bed. Outboard support, also boring-bar 8" diam., 13' long, included. Weight about 170,000 lbs. Cost, new, \$13,000.

Get our complete list No. 233 covering entire stock of Turret Lathes, Engine Lathes, Milling Machines, Punches, Shears, Boring Mills, etc.

J. J. McCabe, 30 Church St., New York

Let Us Supply Your Hard-To-Get Machines

Used Iron-Working Tools

We make a specialty of supplying used iron and brass-working machinery of the kinds that are difficult to obtain new at this time.

Equipment for Making War Material

Our other specialty is the equipment of shops complete, in the shortest possible time, with the best selection now obtainable of new or used tools, for the manufacture of shrapnel or other war material.

We Both Buy and Sell

Let us know what hard-to-get machines you need. Let us have a list of the tools you would like to dispose of. Let us equip your shop for special manufacturing.

Neidow & Payson

No. 9 South Clinton St., Chicago, Ill.
Telephones, Franklin 591 and 2036

Used Machinery

42" Bullard Vertical Boring Mill
with two heads.

Binsse Horizontal Boring Machine.

2 Spindle Newton Adjustable Horizontal Boring Machine.

18" Cincinnati Gear Cutter.

No. 60 Heald Cylinder Grinder.

Vonnegut Machinery Co.

127 S. Meridian St., - Indianapolis, Ind.

REMANUFACTURED MACHINERY

FOR QUICK SHIPMENT

Partial List of Largest Stock in the World

Milling Machines.

No. 0 Cincinnati plain.
No. 25 Brainard plain.
No. 15 Garvin plain.
2-No. 20 Oesterlein plain.
1-No. 20 Oesterlein universal.
2-No. 2 Cincinnati plain.
No. 2-Y Brown & Sharpe plain.
No. 2-B Brown & Sharpe plain.
No. 2-H Brown & Sharpe plain.
No. 2 Kearney & Trecker univ.
No. 2 Kempsmith plain
2-No. 3 Becker-Brainard plain.
3-No. 9 Kempsmith plain.
No. 34 Oesterlein plain.
No. 3 Kempsmith plain.
No. 3-A Owen universal.
No. 5-B Becker-Brainard plain.
No. 4 Becker-Brainerd plain.
No. 18 Kempsmith plain.
No. 5 Kempsmith plain.
No. 5-C Becker-Brainard plain.
No. 2 Van Norman Duplex.
2-No. 0 Brown & Sharpe plain.
1-No. 2-A Kempsmith plain.
1-No. 28 Oesterlein plain.
1-No. 5-B Becker-Brainard pl.
Also about 30 Lincoln millers.

Horizontal Boring Machines.

1-Flather.
1-No. 1 Niles.
1-Newark.
5-Bement.
3-Beaman & Smith.
2-Binase.
1-Bement-Miles & Co.
1-No. 3 Sellers.
1-No. 2 Koffman.

Vertical Boring Machines.

30" Baush.
32" Bullard.
34" Rogers.
3-34" Bullard.
2-36" Brown & Sharpe.
37" Baush & Harris.
40" Bullard.
42" Bullard.
42" Gisholt.
43" Bullard.
54" Colburn.

HILL, CLARKE & CO. OF CHICAGO
125 N. CANAL ST., CHICAGO, ILL.

Better, Cheaper Benching



Made With
"New Britain"
Pressed Steel
Bench Legs

With
Our
Patented
Stringer
Feature

Comparison of Bench Leg Costs on 240 Feet of Benching

New Britain System.—
31 Legs (6 feet apart) @ \$2.65 each.

\$82.15.

Common Legs without patented "Stringer Feature".—
41 Legs (6 feet apart) @ \$2.65 each.

\$108.65—35% more.

Other makes of Legs, requiring wall support.—
61 Legs (4 feet apart) @ \$2.65 each.

\$161.65—97% more.

Costs Less. The above comparison shows saving in cost of bench legs only—and that is enough, goodness knows. Then it takes less labor to plank 31 legs than 41 or 61; and as there is no wall dependence, it saves more work there. Bolts for putting everything together, including front plank and back board, make easy and quick work of it.

Worth More. All steel, unbreakable, last a lifetime, and make stiffest benches. The patented stringer gives extra rigidity, prevents deflection and end sway. The benching is sectional and easy to move. Leaves room for heating pipes—in fact, every contingency is provided for.

Can ship today. Or do you want circular first?

The New Britain Machine Co.
60 Chestnut St., New Britain, Conn.

